

John Guest Speedfit Limited

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JG Speedfit®



No.'s 95/3177

BS7291
KM39767

THE PUSH-FIT SOLUTION FOR PLUMBING & HEATING SYSTEMS



The company has a policy of continuous research and development and reserves the right to amend without notice the specification and design of all products illustrated in this catalogue. John Guest Speedfit reserve the right to change the colour and shape of products. Photographs are for illustration purposes only.

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AVAILABLE FROM:

UK PRODUCT RANGE AND INSTALLATION GUIDE

October 2007

Worldwide connections

The John Guest Group has a long established reputation as a world leading manufacturer of push-in fittings, tube and other fluid control products. A

reputation built on producing consistently high quality products with an ongoing commitment to value engineering and product development.

THE PUSH-FIT SOLUTION FOR PLUMBING AND HEATING SYSTEMS

JG Speedfit is a push-fit system suitable for the plumbing of normal domestic hot and cold water services and central heating applications, including pressurised and combi systems.

The System is approved by the BRA and the WRAS. Speedfit 'PEM' fittings and PEX and Polybutylene Barrier Pipe are Kitemarked to BS7291 Parts 1, 2 and 3 Class S Licence No KM39767.



Quality Manufacture

A commitment to quality is at the heart of the John Guest Philosophy.

The strictest control is maintained by virtue of the fact that design and manufacture is carried out in modern purpose built manufacturing centres in west London and at Maidenhead in Berkshire.

Maintaining control over the whole process from initial tool design and tool making through to final assembly and testing ensuring that only products of the highest quality are produced.

The company believe it is this commitment to quality that has led to it receiving prestigious awards from many of the world's leading testing and approvals organisations.

John Guest is a preferred supplier to many international companies.



Standards & Affiliations



Performance specifications are well within those required for most normal domestic central heating and water supply systems including:

- Mains fed and indirect cold water systems
- Vented and unvented hot water systems
- Vented central heating systems
- Sealed central heating systems provided temperatures and pressures comply with BS7291 Parts 1, 2 and 3 Class S.
- Underfloor heating

Speedfit Fittings have been designed for use with both Speedfit and copper pipe.

Extensive tests have shown that Speedfit products will withstand temperatures and pressures well in excess of normal working conditions.

JG Speedfit should be installed to conform with good plumbing practice.

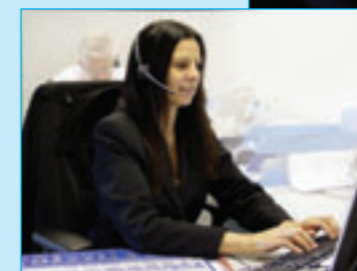
British Gas Service has accepted the John Guest Speedfit System as being suitable for open vented and sealed central heating systems and as eligible for acceptance onto its service contracts.

Technical Support

Our national team of Technical Support Engineers is available to help you get the best from your **Speedfit** System. This includes a free underfloor heating estimate and CAD design service.

Technical Help Desk: 01895-425333

The **JG Speedfit** Technical Advisory Service is available to assist and advise on the aspects of the **Speedfit** System. The service is available 8:00am to 5:00pm Monday to Friday.



SYSTEM FEATURES

- All white system
- Truly demountable without damage to pipe or fitting
- Grip and seal connection
- Superseal Insert gives secondary seal
- Reduced pipe insertion force
- Lightweight and easy to handle on site

SYSTEM BENEFITS

- Installation time reduced by up to 40%
- Pipe flexibility permits the cabling of pipe through less accessible areas
- No risk of fire or flames from a blowtorch
- Easier to work in confined places
- A permanent leak-proof connection
- Corrosion free
- No scale build up
- Lower thermal diffusivity maintains safer surface temperature
- Pipe elasticity can reduce the possibility of bursting under freezing conditions
- Lead free and non toxic
- Less noise from water flow and expansion/contraction
- Long pipe lengths reduce fittings required

GUARANTEE

As a result of long term test programmes and rigorous quality standards, John Guest Speedfit Limited offer a 25 year guarantee against the defects in materials or manufacturing of 'PEM', 'PSE' and 'SFM' Range Plumbing Fittings and Speedfit Barrier Pipe manufactured by John Guest.

John Guest Underfloor Heating Products, which should be installed and maintained in accordance with our recommendations, carry a 2 year guarantee against defects in materials and manufacture.

John Guest Plumbing and Heating Products are for use with normal UK domestic plumbing and heating systems and supplied in accordance with our Conditions of Sale.

SPECIAL APPLICATIONS

Boats. The flexibility of the Speedfit System ensures it can be cabled easily around the interior and hidden from view.

Caravans. Speedfit is ideal for caravan installations due to its flexibility and its resistance to corrosion and freezing.

Exhibitions. The unique ability of the Speedfit System to be easily demounted and reused, together with its flexibility, makes Speedfit ideal for this application.

Agricultural and Horticultural. Speedfit has many applications in agricultural and horticultural environments.

Portable Buildings (site cabins, toilets). As with caravans, Speedfit is well suited to this application.

WORKING TEMPERATURES AND PRESSURES

Application	Usual Working temperature, °C	Maximum working temperature, °C	Maximum working pressure, bar
Cold Water <small>(indirect and direct mains)</small>	20	20	12
Central Heating	82	105, short term malfunction at 114	3
Hot Water <small>(including unvented cylinders)</small>	65	95	6

Speedfit fittings suitable for central heating systems can withstand temperatures up to 114°C intermittently for short periods.

Speedfit fittings shown as not suitable for central heating systems are used primarily on the domestic hot and cold water system accepting temperatures of up to 65°C.

HANDLING FITTINGS AND PIPE

Ensure fittings and pipe are kept clean at all times by keeping them in bags and boxes provided.

Do not empty Speedfit Products onto the floor area.

Ensure internal 'O' Ring seals are kept free from dirt and debris.

PRODUCT SELECTION AND INSTALLATION

John Guest fittings and related products are specifically designed and manufactured by John Guest to the Technical Specifications set out in the John Guest Product Catalogues. All John Guest fittings and related products should be selected, installed, used and maintained in accordance with these Technical Specifications. It is the customer's / user's responsibility to ensure that John Guest fittings and related products are suitable for their intended applications, are properly installed and maintained and are used in accordance with the Technical Specifications. It is also the customer's / user's responsibility to provide it's own customers with any relevant technical information about John Guest products it supplies them.

Speedfit should not be used for gas, fuel oil or compressed air applications.

John Guest produce a push fit system of pipe and fittings for compressed air situations. See separate literature for details.

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Designed to be quick and easy to install.

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For connecting MDPE Cold Water Service Pipe.

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HOW SPEEDFIT WORKS

Speedfit Fittings have a unique grip then seal construction made up of a collet with stainless steel teeth to grip the pipe and an 'O' ring to provide a permanent leak proof seal.

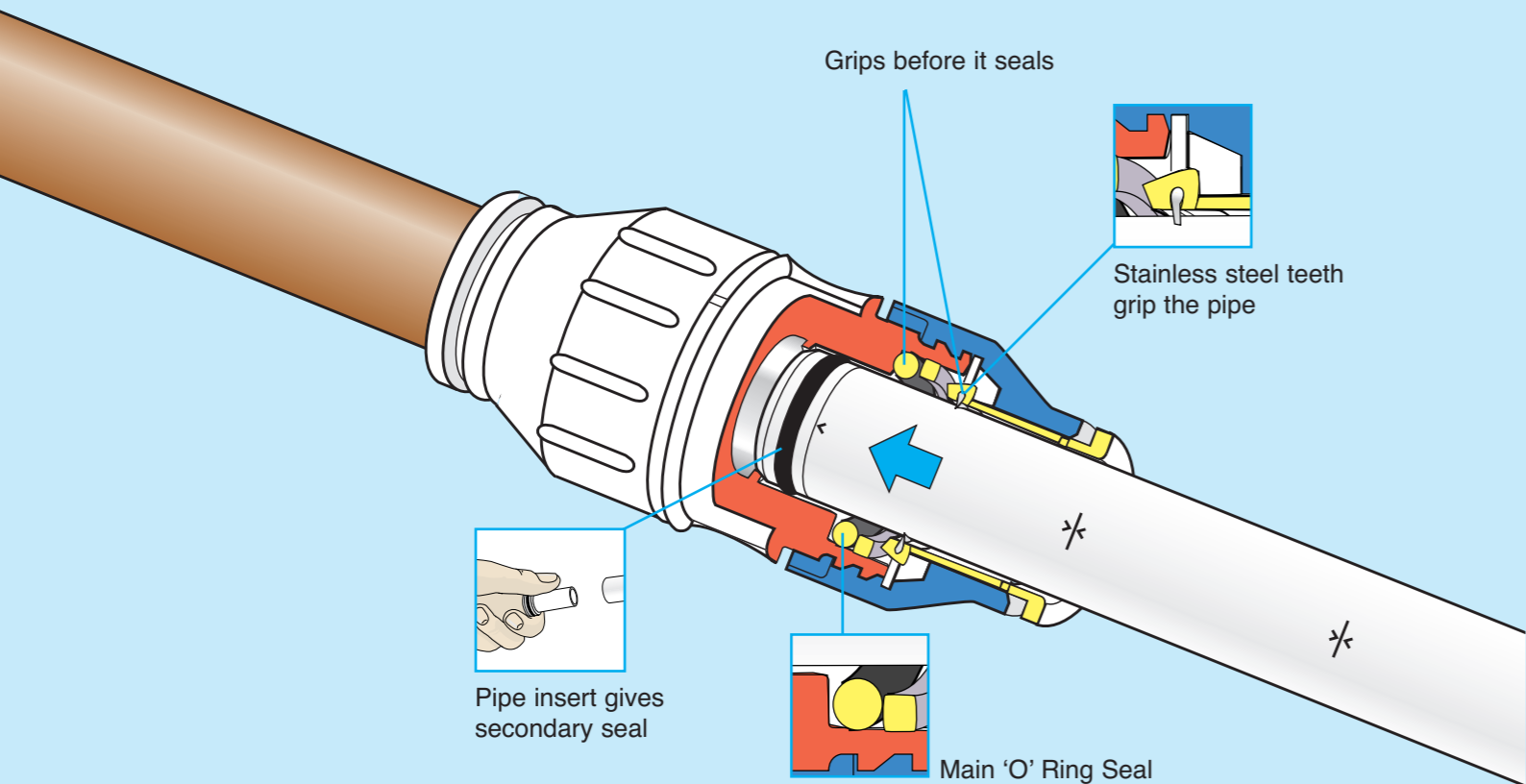
Use of the Superseal Pipe Insert ensures a double 'O' ring seal.

An 'O' ring at the head of the insert and the shape of the stem, provide a secondary seal against the bore of the fitting. A combination of this and the main 'O' ring ensure a good connection.

The stem of the insert gives greater rigidity of the length of pipe within the fitting, reducing the chance of leaks if a side load is applied.

The head of the insert has been designed for ease of insertion.

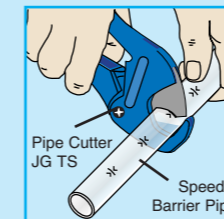
The additional benefit of Twist and Lock Fittings is that a twist of a screwcap locks the pipe in position and gives increased compression on the 'O' ring for even greater security.



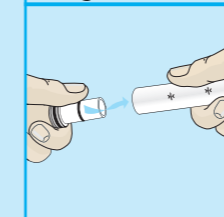
MAKING A GOOD CONNECTION

PREPARE THE PIPE

Fittings and pipe should be kept clean bagged and undamaged before use.

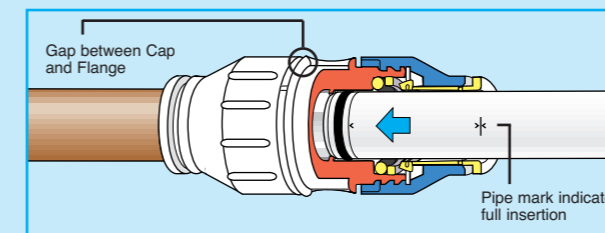


Ensure the pipe is free of score marks. Cut the pipe square. When using Speedfit Barrier Pipe cut along an insertion mark. We recommend the use of JG Pipe Cutters.



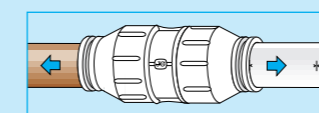
To prevent damage to the 'O' ring remove all burrs and sharp edges. When connecting Speedfit Pipe use a Superseal Pipe Insert. A twisting motion will aid insertion. The insert should only be used with Speedfit Pipe.

NEW TWIST AND LOCK FITTINGS



The fitting should be in the 'unlocked' position, this is shown with a small gap between the screwcap and the body flange.

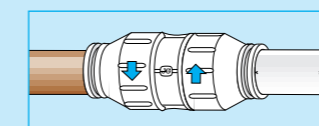
Push the pipe fully into the fitting, up to the pipe stop. If the Speedfit Pipe has been cut correctly the insertion mark on the pipe will be level with the collet head. The 'O' ring on the Superseal Pipe Insert provides a secondary seal against the bore of the fitting. A good connection has been made.



If you are not using collet clips, ensure that the screwcaps are in the locked position.

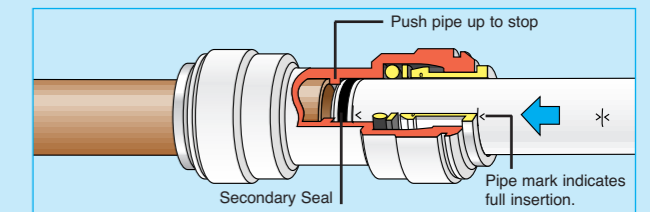
Pull to check it is secure. It is good practice to test the system prior to leaving the site or before use. Our recommended test procedure is shown in our Technical Checklist.

ADDED BENEFIT TWIST AND LOCK



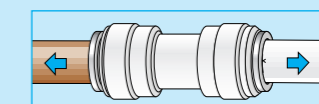
Twist the screwcap until it touches the body flange. This increases the 'O' ring seal around the pipe and locks the pipe into position.

STANDARD SPEEDFIT FITTINGS



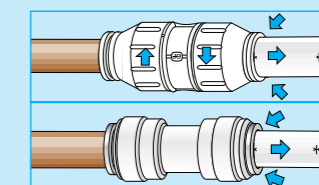
Standard Speedfit connections are made in the same way as Twist and Lock.

Push Pipe up to Pipe Stop. If the Speedfit Pipe has been cut correctly the insertion mark on the pipe will be level with the collet head.



Pull to check connection is secure and test the system. Our recommended test procedure is shown in our Technical Checklist on page 29.

TO DISCONNECT



Ensure that the system is depressurised.

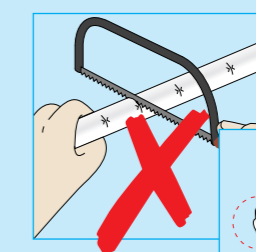
The screwcap on Twist and Lock Fittings will need to be turned back to the unlocked position.

Push the collet square against the face of the fitting by using fingers or with the help of our collet release tool.

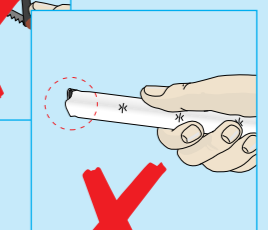
With the collet held in position the pipe can be removed.

The fitting can be used again without the need for replacement parts.

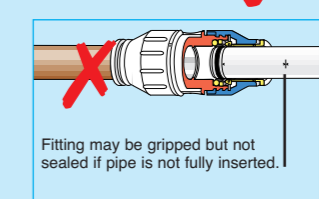
WHAT NOT TO DO



Don't use hacksaws to cut the pipe or leave burrs on the end of the pipe.



Don't use damaged or scored pipe.



Fitting may be gripped but not sealed if pipe is not fully inserted.

Don't forget to push the pipe fully into the fitting, past both the collet (gripper) and the 'O' ring.

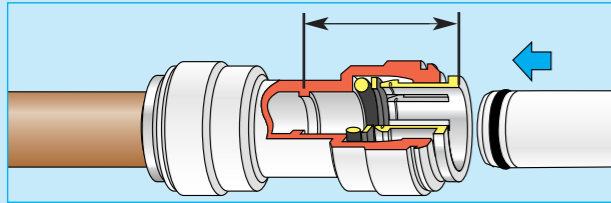
Do not insert fingers into the fitting as the stainless steel teeth may cause injury.

Remember to pressure test the completed installation according to the recommendations in our Technical Checklist.

PIPE STOP DISTANCES

Stops are located at the following distances from the end of the fitting:

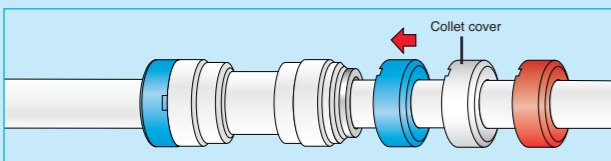
size	10mm	15mm	22mm	28mm
stop distance	20mm	30mm	35mm	44mm



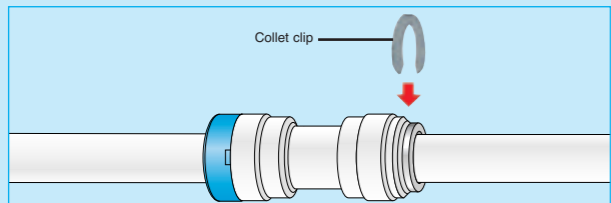
COLLET COVERS

Use a collet cover or collet clip to provide added security against pipe disconnection, e.g. the fitting coming into contact with rigid surfaces and behind dry-lining walls.

Collet covers for use with standard Speedfit fittings, are available in white or in red or blue to allow colour coding of pipes.



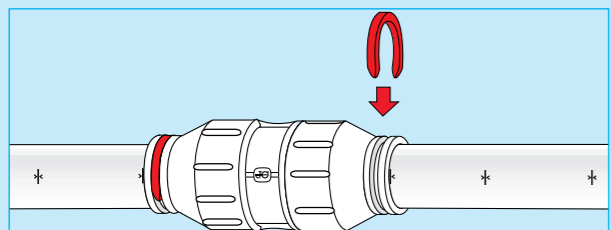
COLLET CLIPS



Collet clips are available in grey and white for use with standard fittings to prevent accidental pipe disconnection.

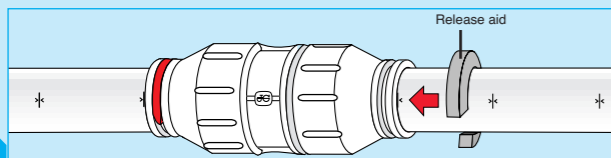
Red or blue collet clips provide colour coding of pipe on twist and lock fittings.

They are not designed to prevent accidental release and should be fitted when the fitting is in the locked position.

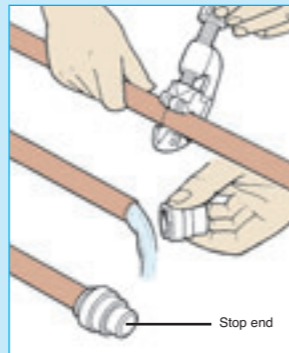


RELEASE AID

The action of pressure in a system could increase the grip of the collet. The release aid allows a firmer grip on the collet whilst removing the pipe.



STOP END



The unique feature of the Speedfit Concept, the ability to disconnect the fitting should you want to, means the Speedfit Stop End not only provides a permanent leakproof seal, but can be readily removed to allow work to restart or to allow an extension to a system. Thus, the fitting is especially useful to allow water to be turned back on, overnight for instance, or if a job has to be interrupted for another reason.

Stop ends are also useful when pressure testing a system before appliances are connected.

STEM ELBOW



Designed to simplify pipe connection in restricted spaces. The Speedfit Stem Elbow provides an instant swivel fitting so pipe can be orientated in any direction.

A special 10mm version gives a neat connection from concealed plumbing to a radiator.



SERVICE VALVE



The Speedfit range of brass chromium plated service valves can be used on both hot and cold water services and central heating. Push fit connections mean much reduced installation time, especially in confined spaces.

The valves, in 10 to 22mm, have a 1/4 turn open/close mechanism operated by a screwdriver slot or a lever.



Tap connector patterns have a union nut to connect direct to a tap or float valve. Lever operated valves are supplied with both a blue and a red indice.



The ability of Speedfit products to twist whilst in situ allows the screwdriver slot operating valve to be turned out of sight, helping to avoid unauthorised tampering.

TAP CONNECTORS

Speedfit manufacturer a wide range of connectors including conventional straight and bent tap connectors.



The range also offers a special and unique Tap Connector that only requires a simple hand tightening to connect up a terminal tap, mixer or float valve. An integral seal within the fitting avoids the need for further sealant. The connectors are useful when replacing existing brassware or in other confined spaces.



Coupling up to a supply is easy. The pipe is simply pushed home into the Speedfit connection and is instantly secured, without the need for specialist tools.

FLEXI HOSES



Manufactured to a quality you would expect from Speedfit, our range of Flexi Hoses has 40 different patterns.

Available in lengths from 150mm to 1,000mm, ends are either push fit to union nut or push fit to push fit, including hoses with an integral service valve operated by a 1/4 turn screwdriver slot.

Apart from being aesthetically pleasing the new white hoses offer more flexibility and a larger through bore for better flow characteristics.



More specialist patterns have been designed to help the installation of monobloc mixers to a 15mm supply. Sold in pairs, each hose in the pair has a different spanner location to ease connection of the threaded end into the monobloc's inlets.



The hoses are suitable for cold water up to 10 Bar and hot water (65°C max) up to 6 Bar and approved by WRAS.

SPEEDFIT MANIFOLD

Speedfit have introduced an innovative 22mm x 10mm 4 way manifold. Departing from the usual manifold design, this new product has 4 in-line 10mm outlets, offering a neater envelope size and therefore a much smaller installation space.

Other benefits include better flow characteristics and a more even distribution of hot water.

The 22mm and 10mm Speedfit push-fit connections make for a fast and easy installation, even in confined spaces.

Whilst designed as a heating product, the manifold can also be used in a mains pressure hot or cold domestic plumbing system, to feed bathroom or kitchen taps and mixers. This allows for a more efficient installation as every terminal fitting has its own dedicated supply.



APPLIANCE TAP

The Speedfit range includes an Appliance Tap for the permanent connection of washing machines and dishwashers, thus enabling complete water isolation to the appliance.



A simple push fit connection of the supply pipe and a plastic thread on the outlet to marry well with the plastic thread on the hose means the Speedfit Appliance Tap is very easy to install. The large round handle is easy to grip and turn.

SUPERSEAL PIPE INSERT

The Superseal Pipe Insert has been developed to be used with Speedfit Barrier Pipe and Speedfit Fittings to provide an extra line of defence when installing a Speedfit Push Fit System.

The insert has its own 'O' ring which, with a stem sliding within the inside of the pipe, gives a secondary seal against the inside of the fitting.



The Speedfit Connection, when made with the insert, has a number of design features.

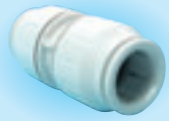
Sliding the stem of the insert into the pipe gives greater compression of the main 'O' ring on the pipe and greater rigidity of the length of pipe within the fitting, reducing the chance of leaks if a side load is applied.

A connection is easier to make because the head of the insert has been designed for ease of insertion.

Superseal Inserts are listed on page 14.

PLUMBING FITTINGS

EQUAL STRAIGHT CONNECTOR



PART No.	SIZE MM
PEM0410W	10
PEM0415W	15
PEM0422W	22
PEM0428W	28

Suitable for central heating systems.

REDUCING STRAIGHT COUPLER



PART No.	SIZE MM
PEM201510W	15 x 10
PEM202215W	22 x 15

Suitable for central heating systems.

PE-COPPER COUPLER



PART No.	SIZE MM
JG601B	20 x 15
JG603B	25 x 15
JG602B	25 x 22

Used to connect PE Pipe to Speedfit or to Table X or Y Copper.

Taken from the Speedfit Underground Fittings Range, see separate section for details and Technical Specification.

Red water only.

EQUAL ELBOW



PART No.	SIZE MM
PEM0310W	10
PEM0315W	15
PEM0322W	22
PEM0328W	28

Suitable for central heating systems.

STEM ELBOW



PART No.	PIPE	STEM
PEM221010W	10	x 10
PEM221015W	10	x 15
PEM221515W	15	x 15
PEM222222W	22	x 22

Suitable for central heating systems

Provides a swivel type connection.

Please note a Collet Cover cannot be used on a Speedfit end assembled with the stem of a 22mm Stem Elbow.

EQUAL TEE



PART No.	SIZE MM
PEM0210W	10
PEM0215W	15
PEM0222W	22
PEM0228W	28

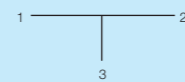
Suitable for central heating systems.

REDUCING TEE



PART No.	SIZE MM
PEM3015BW	15 x 10 x 10
PEM3015AW	15 x 15 x 10
PEM3022CW	15 x 15 x 22
PEM3022BW	22 x 15 x 15
PEM3022DW	22 x 15 x 22
PEM302210AW	22 x 22 x 10
PEM3022AW	22 x 22 x 15
PEM3028BW	28 x 22 x 22
PEM302815AW	28 x 22 x 28
PEM3028AW	28 x 28 x 15
PEM3028DW	28 x 28 x 22

Sizes are listed in the following order.



NEW

Suitable for central heating systems.

STEM TEE



PART No.	SIZE MM
PEM532210W	22 x 22 x 10
PEM532215W	22 x 22 x 15

Suitable for central heating systems.

Sizes are listed in the following order.



TANK CONNECTOR



PART No.	SIZE MM
CM0715S	15
CM0722S	22
CM0728S	28

Suitable for cold water tanks only.

Requires hand tightening only.
Maximum wall thickness of tank 4mm.

STOP END



PART No.	SIZE MM
PSE4610W	10
PSE4615W	15
PSE4622W	22

Suitable for central heating systems.

REDUCER



PART No.	SIZE MM
PEM061510W	15 x 10
PEM062215W	22 x 15
PEM062815W	28 x 15
PEM062822W	28 x 22

Suitable for central heating systems.

FEMALE COUPLER - TAP CONNECTOR



Requires hand tightening only.

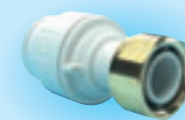
PART No.	SIZE
PSE3210W	10mm x 1/2" BSP
PSE3201W	15mm x 1/2" BSP
PSE3203W	15mm x 3/4" BSP
PSE3202W	22mm x 3/4" BSP

Suitable for central heating systems

Note: Plastic threads are not as strong as metal threads.

For torque figures see Technical Checklist.

STRAIGHT TAP CONNECTOR



With brass swivel nut and sealing washer.

PART No.	SIZE
PEMSTC1514	15mm x 1/2" BSP
PEMSTC1516	15mm x 3/4" BSP
PEMSTC2216	22mm x 3/4" BSP

Suitable for central heating systems.

For torque figures see Technical Checklist.

BENT TAP CONNECTOR



With brass swivel nut and sealing washer.

PART No.	SIZE
PEMBTC1514	15mm x 1/2" BSP

Suitable for central heating systems.

For torque figures see Technical Checklist.

CONVERSION CONNECTOR



Connects imperial to metric pipe.

PART No.	SIZE
NC471	1/2 id x 15mm
NC2324	3/4 id x 22mm

Suitable for central heating systems.

SLIP CONNECTOR



PART No.	SIZE MM
CM-SC-15S	15

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.

HOSE CONNECTOR



PART No.	SIZE
NC448	15mm x 1/2"
NC473	22mm x 3/4"
NC737	22mm x 1/2"

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.

RADIATOR OUTLET PLATE



Creates a neat outlet for 10mm supply pipes to a radiator. To be used with single gang 25mm steel KO boxes to BS 4662, fitted with rubber grommet.

PLUG



PART No.	SIZE MM
PL10	10
PL15	15
PL22	22
PL28	28

Suitable for central heating systems.

PLASTIC BACK PLATE ELBOW



PART No.	SIZE MM x BSP
15PWB	15 x 1/2"

Hot and cold water only, maximum 65°C.
Protect from sunlight and frost.

MANIFOLDS 4 WAY MANIFOLD



PART No.	SIZE MM
SFM512210S	22 x 10

Suitable for central heating systems.

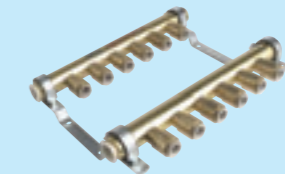
4 PORT RAIL MANIFOLD



PART No.	SIZE MM
SFM522210S	22 x 10
SFM522215S	22 x 15

Suitable for central heating systems.

BRASS RAIL MANIFOLD



PART No.	SIZE MM
JGRAIL4	4 Zone 22 x 15
JGRAIL6	6 Zone 22 x 15
JGRAIL12	12 Zone 22 x 15

BRASS MANIFOLD



PART No.	SIZE MM
JGMAN2-R	2 Port 3/4" x 15
JGMAN3-R	3 Port 3/4" x 15
JGMAN4-R	4 Port 3/4" x 15
JGMAN2-B	2 Port 3/4" x 15
JGMAN3-B	3 Port 3/4" x 15
JGMAN4-B	4 Port 3/4" x 15

Red Handle

Blue Handle

Blanking plug supplied with each manifold.



Control knobs have the means to be labelled 'Basin', 'Bath', 'Sink', 'Shower', 'Toilet', 'Bidet' or 'Washing Machine'.

BRAIDED FLEXI HOSES

Not suitable for central heating systems.

Hot and Cold water only, 65°C max.

SPEEDFIT X UNION NUT

	PART No.	SIZE MM X BSP
150mm long	FLX43P	15 x 1/2"
300mm long	FLX34P	10 x 1/2"
	FLX35P	15 x 3/8"
	FLX15P	15 x 1/2"
	FLX16P	15 x 3/4"
500mm long	FLX22P	22 x 3/4"
	FLX18P	15 x 1/2"
1000mm long	FLX20P	15 x 3/4"
	FLX19P	22 x 3/4"
	FLX23 Full Bore	22 x 3/4"
	FLX40	15 x 1/2"
	FLX42	15 x 3/4"
	FLX41	22 x 3/4"

SPEEDFIT X SPEEDFIT

	PART No.	SIZE MM
300mm long	FLX33P	15 x 10
	FLX17P	15 x 15
	FLX26P	22 x 22
500mm long	FLX21P	15 x 15
	FLX27P	22 x 22
1000mm long	FLX47	15 x 15

SPEEDFIT X MALE THREAD

	PART No.	SIZE MM X BSP
300mm long	FLX49	15 x 3/8"

ELBOW PATTERN

	PART No.	SIZE MM X BSP
300mm long	FLX36P	15 x 1/2"

SPEEDFIT X UNION NUT WITH SERVICE VALVE

	PART No.	SIZE MM X BSP
300mm long	BRASS VALVE	
	FLX24P	15 x 1/2"
	FLX25P Full Bore	22 x 3/4"
500mm long	FLX31P	15 x 1/2"
	FLX38P	15 x 3/4"
	FLX32P Full Bore	22 x 3/4"
NEW	PLASTIC VALVE	
	FLX37P	15 x 1/2"
	FLX39P	22 x 3/4"
NEW	PLASTIC VALVE WITH HANDLE	
	FLX37-H	15 x 1/2"
	FLX39-H	22 x 3/4"

SPEEDFIT X SPEEDFIT WITH SERVICE VALVE

	PART No.	SIZE MM
300mm long	BRASS VALVE	
	FLX44P	15 x 15
500mm long	FLX45P	15 x 15

SPEEDFIT X PLAIN STEM

	PART No.	PIPE	STEM
300mm long	FLX53	15	15

FOR MONOBLOC MIXERS

	PART No.	SIZE MM X MALE
300mm long	FLX48	12 x M10
	FLX28	15 x M10
	FLX29	15 x M12

WHITE PVC FLEXI HOSES

Not suitable for central heating systems.

Hot and Cold water only, 65°C max.

SPEEDFIT X UNION NUT

	PART No.	SIZE MM X BSP
300mm long	WFLX15	15 x 1/2"
	WFLX16	15 x 3/4"
	WFLX22	22 x 3/4"
500mm long	WFLX18	15 x 1/2"
	WFLX20	15 x 3/4"
	WFLX19	22 x 3/4"

SPEEDFIT X SPEEDFIT

	PART No.	SIZE MM
300mm long	WFLX17	15 x 15

SPEEDFIT X PLAIN STEM

	PART No.	PIPE	STEM
200mm long	WFLX51	15	15

ELBOW PATTERN

	PART No.	SIZE MM X BSP
300mm long	WFLX36	15 x 1/2"

SPEEDFIT X UNION NUT WITH SERVICE VALVE

	PART No.	SIZE MM X BSP
300mm long	PLASTIC VALVE WITH HANDLE	
	WFLX37-H	15 x 1/2"
	WFLX39-H	22 x 3/4"

FOR MONOBLOC MIXERS

	PART No.	SIZE MM X MALE
300mm long	WFLX28	15 x M10
	WFLX29	15 x M12

IDENTITY DISCS

	PART No.	PACK QTY
	FLX - RED	10
	FLX - BLU	10

For handles on service valves.

BRASS FITTINGS

BRASS MALE COUPLER

PART No.	SIZE MM X BSPT
MW011504N BRASS	15 x 1/2"
MW012206N BRASS	22 x 3/4"
MW012808N	28 x 1"

PART No.	SIZE MM X BSP
10MC (1/2) BRASS	10 x 1/2"
15MC (1/2) BRASS	15 x 1/2"
22MC (3/4) BRASS	22 x 3/4"
MW012818N	28 x 1"

Suitable for central heating systems.
Manufactured in DZR Brass.

BRASS BACK PLATE ELBOW

PART No.	SIZE MM X BSP
15WB	15 x 1/2"
22WB	22 x 3/4"

Manufactured in DZR Brass.
Suitable for central heating systems.

SHORT VERSION
15WB2 15 x 1/2"

Manufactured in Brass.
Suitable for central heating systems.

BRASS MALE STEM ADAPTOR

PART No.	SIZE MM X BSPT
MW051504N	15 x 1/2"
MW052206N	22 x 3/4"
MW052818N	28 x 1" BSP

Converts Speedfit to male thread.

Suitable for central heating systems.
Manufactured in DZR Brass.

BRASS FEMALE STEM ADAPTOR

PART No.	SIZE MM X BSP
MW501514N	15 x 1/2"
MW502216N	22 x 3/4"

Converts Speedfit to female thread.

Suitable for central heating systems.
Manufactured in DZR Brass.

BRASS MALE CYLINDER ADAPTOR

PART No.	SIZE MM X BSP
22CMA	22 x 1

Suitable for central heating systems.
Manufactured in DZR Brass.

BRASS FEMALE CYLINDER ADAPTOR

PART No.	SIZE MM X BSP
22CFA	22 x 1

Suitable for central heating systems.
Manufactured in DZR Brass.

VALVES

STOP VALVE



PART No.	SIZE MM
15STV	15
22STV	22

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.

BRASS STOP TAP



PART No.	SIZE MM
15BSC	15

Only suitable for central heating.
Head and Body manufactured in DZR Brass.

WASHING MACHINE TAP



PART No.	SIZE
15 APT	15mm x 3/4" BSP

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.
For torque figures on plastic threads please see Technical Checklist.

EMERGENCY SHUT OFF TAP



PART No.	SIZE MM
15 ESOT	15

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.

DOUBLE CHECK VALVE



PART No.	SIZE MM
15DCV	15

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.

BRASS DRAIN COCK



PART No.	SIZE MM
15BDC	15

Suitable for central heating systems.
Manufactured in DZR Brass.
Please note a collet cover cannot be used on a Speedfit end assembled with a draincock.
Draincocks can be fitted with a standard fitting fitted with a collet clip.
When using with Twist and Lock Fittings the fitting must be locked.

PLASTIC SERVICE VALVE



PART No.	SIZE MM
15SV	15
22SV	22

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.

PLASTIC SERVICE VALVE WITH TAP CONNECTOR



PART No.	SIZE
15SVSTC	15 x 1/2"

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.



PART No.	SIZE
15SVSTC-W	15 x 1/2"

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.

PLASTIC ANGLE SERVICE VALVE WITH TAP CONNECTOR



PART No.	SIZE
15SVBTC	15 x 1/2"

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.



PART No.	SIZE
15SVBTC-W	15 x 1/2"

Not suitable for central heating systems.
Hot and Cold water only, 65°C maximum.

BRASS SERVICE VALVE



PART No.	SIZE MM
15HSV-BRASS	15

Suitable for central heating systems.

BRASS CHROME PLATED SERVICE VALVE



PART No.	SIZE MM
10HSV	10
15HSV	15
22HSV	22

Suitable for central heating systems.

BRASS CHROME PLATED SERVICE VALVE WITH TAP CONNECTOR



PART No.	SIZE
15PTS	15 x 1/2"
22PTS	22 x 3/4"

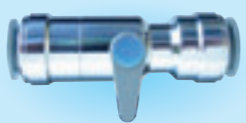
Suitable for central heating systems.

BRASS CHROME PLATED BALL VALVE



PART No.	SIZE MM
10BV	10
15BV	15
22BV	22

Suitable for central heating systems.



Each Valve has a red and a blue indice.

PLASTIC BALL VALVE



PART No.	SIZE MM
15SV-H	15
22SV-H	22

Not suitable for central heating systems.
Each Valve has a red and a blue indice.

PIPE AND PIPE ACCESSORIES

PEX BARRIER PIPE



Coils

The pipe has an inner barrier to stop the ingress of atmosphere.

British Gas accepted for water pipe in vented and sealed central heating systems.

PART No.	SIZE
10BPEX-25C	10mm x 25m
10BPEX-50C	10mm x 50m
10BPEX-100C	10mm x 100m
15BPEX-25C	15mm x 25m
15BPEX-50C	15mm x 50m
15BPEX-100C	15mm x 100m
15BPEX-120C	15mm x 120m
15BPEX-150C	15mm x 150m
22BPEX-25C	22mm x 25m
22BPEX-50C	22mm x 50m

Suitable for central heating systems.

PEX BARRIER PIPE



Straight lengths

The pipe has an inner barrier to stop the ingress of atmosphere.

*By special order only.

PART No.	SIZE
15BPEX-20x2L	15mm x 2m
15BPEX-20x3L	15mm x 3m
15BPEX-20x6L	15mm x 6m
22BPEX-20x2L	22mm x 2m
22BPEX-20x3L	22mm x 3m
22BPEX-20x6L	22mm x 6m
28BPEX-10x3L	28mm x 3m
* 28BPEX-10x6L	28mm x 6m

Suitable for central heating systems.

POLYBUTYLENE BARRIER PIPE



Coils

The pipe has an inner barrier to stop the ingress of atmosphere.

British Gas accepted for water pipe in vented and sealed central heating systems.

PART No.	SIZE
15BPB-25C	15mm x 25m
15BPB-50C	15mm x 50m
15BPB-100C	15mm x 100m
15BPB-120C	15mm x 120m
15BPB-150C	15mm x 150m
22BPB-25C	22mm x 25m
22BPB-50C	22mm x 50m

Suitable for central heating systems.

SUPERSEAL PIPE INSERT



To be used only when connecting Speedfit Pipe and Speedfit Fittings to enhance the sealing security of the connections. See page 05.

PART No.	SIZE MM
STS10	10
STS15	15
STS22	22
STS28	28

Suitable for central heating systems.

PIPE INSERT



To be used when connecting Speedfit Pipe to a compression fitting. See Page 16.

PART No.	SIZE MM
TSM10N	10
TSM15N	15
TSM22N	22
TSM28N	28

Suitable for central heating systems.

CONDUIT PIPE



PART No.	SIZE
BLACK	
15BLK CON-25C	15mm x 25m
15BLK CON-50C	15mm x 50m
22BLK CON-25C	22mm x 25m
22BLK CON-50C	22mm x 50m
RED	
15RED CON-50C	15mm x 50m
22RED CON-50C	22mm x 50m
BLUE	
15BLU CON-50C	15mm x 50m
22BLU CON-50C	22mm x 50m

To be used when Speedfit Pipe is laid in Concrete and Masonry, see section on page 20.

PIPE IN PIPE



PART No.	SIZE
15PIP-50C-E	15mm x 50m
22PIP-50C-E	22mm x 50m

CONDUIT ELBOW

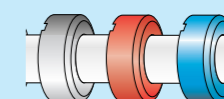


PART No.	SIZE
CONELB	FITS 10, 15 & 22mm

COLLET COVER



Available in white, red or blue



PART No.	SIZE MM
PKM1910W	10
PKM1910R	10
PKM1910B	10
AM1915W	15
PM1915R	15
PM1915B	15
AM1922W	22
PM1922R	22
PM1922B	22

Suitable for central heating systems

COLLET LOCKING CLIP



PART No.	SIZE MM
CM1810S	10
CM1815S	15
CM1822S	22
CM1810W	10
CM1815W	15
CM1822W	22

PART No.	SIZE MM
CM1810R	10
CM1815R	15
CM1822R	22
CM1810B	10
CM1815B	15
CM1822B	22

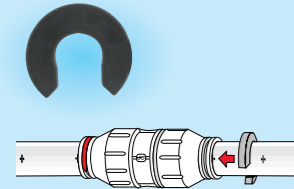
Suitable for central heating systems.

White and grey collet clips prevent accidental release of pipe from standard fittings.

Red and blue clips provide colour coding of pipe, they should not be used to prevent accidental release of pipe.

PIPE AND PIPE ACCESSORIES

RELEASE AID



Allows a firmer grip on the collet when removing pipe.

PART No.	SIZE MM
10RA	10
15RA	15
22RA	22
28RA	28

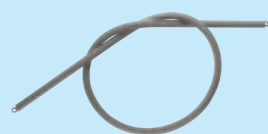
COLD FORMING BEND



To help create a tighter bend than the minimum with unsupported pipe.

PART No.	SIZE MM
10CFB	10
15CFB	15
22CFB	22

BENDING SPRING



PART No.	SIZE MM
JG-BS10	10
JG-BS15	15
JG-BS22	22

PIPE CUTTER



For up to 22mm size pipe.

PART No.
JG-TS

HEAVY DUTY PIPE CUTTER



For up to 28mm size pipe.

PART No.
JG HDC
BLADE-JGHDC

PIPE CLIPS AND SPACERS



PART No.	SIZE MM
PC15W	15
PC22W	22
PC28W	28
PCSW	

NAIL CLIP



PART No.	SIZE MM
NPC10	10
NPC15	15
NPC22	22
NPC28	28

FOIL TAPE



PART No.	SIZE MM X M
JGTAPE	50 x 45

Metallic tape to meet NHBC requirements for plastic pipe to be detected inside walls.

PLUMBING SPARE PARTS

COLLETS



For Standard Fittings

PART No.	SIZE MM
PXC 10	10
PXC 15	15
SPF 22	22
PXC 28	28

For Twist and Locks Fittings

PART No.	SIZE MM
PXC 10	10
PXC 15	15
PXC 22	22
PXC 28	28

EPDM 'O' RING



PART No.	SIZE MM
10 EPR	10
15 EPR	15
22 EPR	22
28 EPR	28

THREAD WASHER



PART No.	SIZE
1/2 EPW	1/2
3/4 EPW	3/4

For use with Female Coupler/Tap Connector.

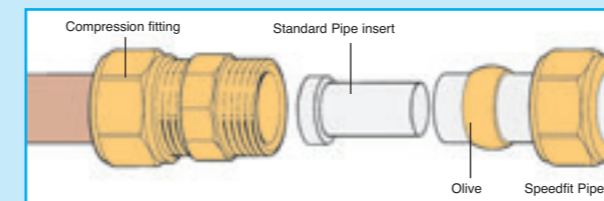
SYSTEM CONNECTIONS

CONNECTION TO COMPRESSION FITTING

Many but not all compression fittings are suitable for use with plastic fittings and pipe. Users should therefore check for compatibility. Compression fittings with short tube stop depth or brass olives should not be used with plastic fittings or pipe.

When using compression fittings with Speedfit Pipe, a Standard Pipe Insert (prefix TSM) must be used to withstand the compressive pressure of the olive. The olive must be located within the length of the pipe insert and the pipe fully inserted into the fitting. The connection should not need more than 2 full turns after the olive has gripped the pipe. JG Speedfit recommend the use of soft copper olives.

Ensure nut and olive are in place before inserting pipe insert.



CONNECTION TO IMPERIAL PIPE AND FITTINGS

The Speedfit Range includes couplers to connect Speedfit Pipe to 1/2" to 1" BSP and BSPT. See page 12.

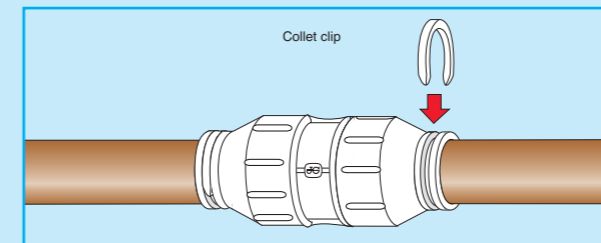


Fittings to connect imperial pipe to metric pipe are shown on page 10.

CONNECTION TO CHROME-PLATED COPPER PIPE

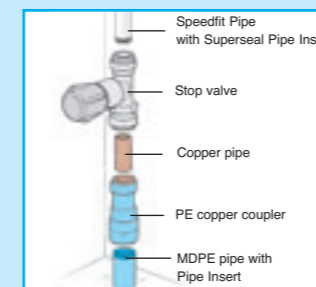
Speedfit fittings can be connected onto chromium plated copper pipe if the chromium plating is completely removed to the full depth of the fitting. To ensure maximum grip, the fitting of a collet clip is recommended.

It is not possible to connect Speedfit fittings to Stainless Steel Pipe.



CONNECTION TO MAINS SUPPLY

In modern properties, water enters a building usually in blue MDPE (medium density polyethylene) pipe. In order to comply with Water Regulation Schedule 2.10, the internal plumbing system should be connected via a Speedfit Stop Valve (Part Nos. 15STV and 22STV) in conjunction with a PE-Copper Coupler from the Speedfit range of Underground Fittings.



Connection of Speedfit pipe to supply pipe of other materials should be via a stop tap with a 15mm or 22mm compression outlet.

CONNECTION TO RING MAINS

Water-replenishing ring mains are typically used in hotels and hospitals. They are maintained at a constant high temperature to supply hot water to distribution pipes to wards or hotel rooms which may be some way from the heat source.

These systems are very different from more conventional domestic hot water and central heating systems.

Speedfit Products cannot be used on ring main systems. The exception would be those systems designed for domestic situations which have an intermittent temperature of less than a maximum of 65°C. This is in accordance with BS7291 Parts 1 and 3 Class S.

CONNECTION TO BOILERS

Speedfit pipe should never be connected directly to a boiler.

Although most modern boilers have a high limit thermostat, residual heat can be conducted by the heat exchanger. Therefore, Speedfit recommend a minimum of 1 metre from the boiler casing should be run in copper pipe unless otherwise stated in the boiler manufacturers installation literature.

A gravity primary circuit operating on an uncontrolled cooking range or solid fuel boiler should be run entirely in copper and the heating circuit run in copper for the first metre.

Refer to BS 5955: Part 8 for further clarification.

All appliances should have safety devices to make sure they cannot operate above the working temperature and pressure range set out in our Technical Checklist on page 29. If safety devices are not incorporated within the appliance then external controls will be needed.

Water meters (and other devices) can contain check valves that prevent the expansion of heated water back down the main supply from a combi boiler. If plastic pipe is to be used, a suitable expansion vessel must be fitted. This is especially important to consider if a water meter is fitted retrospectively. Speedfit do not recommend the use of plastic pipe on the main supply between a water meter and a combi boiler if an expansion vessel is not fitted.

Speedfit Products should not be fitted to a sealed system oil boiler, back fired boiler or other uncontrolled heat source.

Please also see **Drop-Pipe Systems** on page 17 and **System Commissioning and Flushing** on page 21.

CONNECTING TO OTHER PLUMBING FIXTURES

As shown in the Product Range List, the Speedfit range of fittings includes valves, taps, adaptors and connectors for the plumbing of all typical domestic appliances and fittings.

CONNECTION TO CYLINDER & WATER HEATERS

Speedfit can be used on sealed and open vented heating systems, where boilers are either heating a hot water storage cylinder or instantaneous hot water such as a combination boiler. The temperature and pressure limits of the system must not exceed the maximum values stated under the heading 'Working Temperatures and Pressures'.

When using a traditional copper vented cylinder Speedfit pipe and fittings can be installed with direct connections to the cylinder.

CONNECTION TO CYLINDER & WATER HEATERS CONTINUED

Unvented pressurised cylinders can be installed using Speedfit Pipe and Fittings. However, insertion depths on compression joints that form part of the cylinder must be checked prior to installation and the use of standard pipe inserts (Prefix TSM) is recommended.

In accordance with current U.K. Building Regulations (Part G), discharge pipes from temperature and/or pressure relief valves must be run in metal pipework.

Speedfit connections to combined Cylinder/Boiler units and Thermal Storage Units must be made outside the casing unless otherwise stated in manufacturers installation literature.

DROP-PIPE SYSTEMS

Care should be taken when designing and installing a central heating system where radiators are supplied by pipe work which drops from an upper floor.

With this kind of system it is possible to trap air in the upper floor pipe work. When the boiler is fired the increase in pressure within the pipe caused by expanding air could cause the pipe to burst.

It is therefore essential that the system be designed so that any air can be removed from the system either automatically or manually by installing automatic or manual air vents at the highest points of the system.

DISCHARGE PIPES

Speedfit pipe should not be used to provide the discharge from unvented cylinders, unvented water heaters and sealed systems via the temperature relief and pressure relief valves.

CONNECTION TO COPPER PIPE

The minimum distance to make a solder connection on copper pipe inserted into a Speedfit Fitting is 450mm (18 inches). Ensure that any residual flux solder is not allowed to come in contact with the fitting. That same measurement is the safe distance to use a freezer kit to Speedfit Pipe.

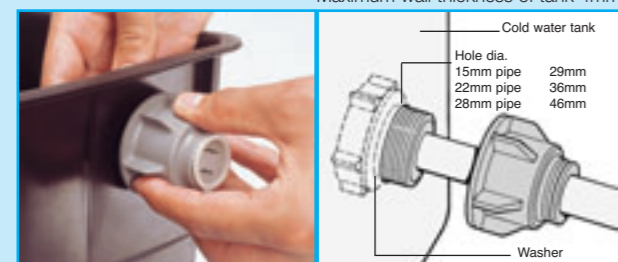
CONNECTING TO COLD WATER STORAGE TANK

To install the Speedfit Tank Connector, unscrew the nut and push the body of the fitting through the tank hole with the washer on the inside of the tank.

Hand tighten the nut onto the body. Push the pipe into the connector.

Note: Hand tightening the nut onto the body is all that is required. Further mechanical tightening will damage the fitting.

Maximum wall thickness of tank 4mm



CONNECTION TO PUMPS AND VALVES

Speedfit pipe should be connected to circulating pumps, motorised valves in accordance with the section in this book headed, "Connecting Plastic Pipe To Compression Fittings". If Speedfit pipe is not mounted on a supporting structure, the pipe must be clipped close to the components' connections to ensure adequate support and to assist in the reduction of vibration.

For heavier equipment, ensure that appropriate metal brackets provide full and independent support of the components and that it does not rely solely on the pipework for support.

WATER HEATERS

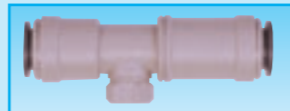
Speedfit recommend that mains supply pipework to unvented water heaters (up to 15ltr capacity), be run in metal pipes.

UNVENTED PRESSURISED CYLINDERS

Unvented Pressurised Cylinders can be installed using Speedfit pipe and fittings. However if the safety parameters of the cylinder exceed those of the pipe and fittings it is possible to fit a pressure reduction valve on the out going hot supply pipe. This will not interfere with any other cylinder safety devices demanded by regulations as they are all fitted in the incoming side of the cylinder. Run a short length of copper pipe from the cylinder connection (about 150mm - 300mm) then fit a Honeywell DO5F pressure reduction valve. This will protect the pipe and fittings from excessive pressure in the event of boiler / cylinder malfunction. The factory fitted temperature / pressure relief valve on the cylinder will discharge below 100°C therefore protecting the pipe from excessive temperature.

PREVENTING BACK FLOW

The Speedfit range includes a Double Check Valve (Part No 15DCV) to enable installers to comply with Water Regulation Schedule 2.15, thus preventing contamination of water arising from back siphonage, backflow or cross connection.



RADIATOR CONNECTIONS

The most common way of running pipework to a radiator is to run both flow and return pipes central to the radiator position.



The pipes exit a single gang box (fitted with rubber grommets) located at the mid height of the finished radiator position. This also provides a fixed point for other trades to work to and reduces the risk of damage to the pipework.

Once the plasterboard is installed the pipes are passed through the Speedfit Radiator Outlet Plate to exit plasterboard without the need of unsightly holes.

Metal reducing sets which convert radiator valves from 15mm to 10mm are not suitable for use with Speedfit Fittings or Pipe as they can cause damage to the plastic.

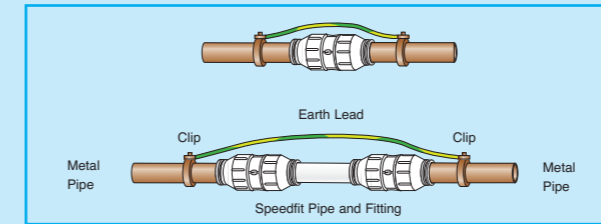
ELECTRICAL CONTINUITY

The plumbing or heating system installer should have these aspects checked to ensure compliance with current IEE regulations. If in doubt please contact the Speedfit Technical Advisory Service or your local Electricity Authority.

ELECTRICAL CONTINUITY CONT'D

IEE Guidance Note 7 provides useful guidance on the design of electrical installations where there is increased risk of electric shock. It recognises that the requirement for supplementary bonding may be relaxed where metal taps and plastic pipes supply other bathroom fittings.

Similarly a metal bath or radiator not connected to an extraneous-conductive-part is not required to be connected to the local supplementary conductors.



SUPPLEMENTRY BONDING TO BATHROOMS

Pipe Material	Supplementary Bond Required Between			Comments
	Cold Water	Hot Water	Central Heating	
P	P	P	Earth terminals of protective conductors of class I and of class II equipment and accessible exposed conductive parts of the building structure.	Bonding of metal taps metal radiators or metal baths is not required unless the bath is connected to the metallic building structure.
P	M	M	Hot water pipe, central heating pipes, earth terminals of protective conductors of class I and class II equipment and accessible exposed conductive parts of the building structure.	A bond is not required to the taps either hot nor cold, or to metal baths unless connected to the metallic building structure.
P	P	M	Central heating pipes, the earth terminals of protective conductors of class I and class II equipment and access to exposed conductive parts of the building structure.	Bonding of metal water taps is not required, nor metal baths unless connected to the metallic building structure.
M	M	M	All metal pipes, earth terminals of protective conductors class I and class II equipment, and accessible exposed conductive parts of the building structure.	Metal pipes themselves can be used as bonding conductors if joints are metal to metal and electrically continuous.
M	M	P	All metal pipes, earth terminals of protective conductors of class I and class II equipment, and accessible exposed conductive parts of the building structure.	Metal central heating radiator does not require bonding.

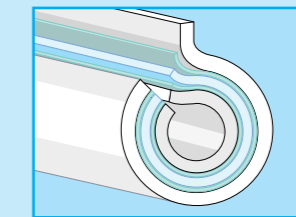
P = Plastic M = Metal NB: All Waste Pipes are plastic.

- Supplementary bonding is carried out to the earth terminal of protective conductors of class I and class II equipment within the bathroom. A supplementary bond is not run back to the main earth.
- Metal window frames are not required to be supplementary bonded unless they are electrically connected to the metallic structure of the bonding.
- Metal baths supplied by metal pipes do not require supplementary bonding if all the pipes are bonded and there is no other connection of the bath to earth.
- All bonding connections must be accessible and labelled "Safety Electrical Connection - Do Not Remove".

INSTALLING PIPEWORK

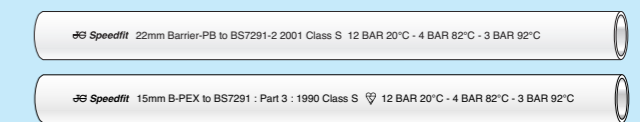
SPEEDFIT BARRIER PIPE

Speedfit Barrier Pipe is manufactured to BS 7291 Parts 1, 2 and 3 Class S and is Kitemarked.



It is made up of 5 layers, the centre of which is a blue coloured oxygen barrier which prevents the ingress of air into the system, thereby reducing the effect of corrosion on metal components.

Because of its low thermal conductivity, when carrying hot water, Speedfit Pipe is cooler and therefore safer to touch. Relatively low heat loss through radiation means that a system retains its heat longer and delivers hot water more quickly and with less wastage than a metal system.



The pipe is available in coils and straight lengths. See pages 14. Pipe markings are spaced to aid the making of a good connection when using a Superseal Pipe Insert.

PIPEWORK SIZING

For general guidance on pipework sizing, please refer to BS6700 or the Institute of Plumbing Engineering Services Design Guide. Speedfit fittings are suitable for pipes within ±0.1mm of nominal size. They can be used with copper pipe to BS EN 1057 or Speedfit plastic pipe.

The Product Range List shows the fittings available for reducing pipe diameters within the system.

Speedfit pipe is available in straight lengths and coils.

	Pipe Diameter				
	2m	3m	6m	25m	50m
Straights	15mm	22mm	28mm	-	-
	15mm	22mm	28mm	-	-
	15mm	22mm	28mm	-	-
Coils	10mm	15mm	22mm	-	-
	10mm	15mm	22mm	-	-
	10mm	15mm	-	-	-
	-	15mm	-	-	-
	-	15mm	-	-	-

METAL FOIL TAPE

JG Speedfit aluminium foil tape can be used to fulfil the NHBC requirements for the identification of location of plastic pipes in or behind a wall surface by a metal detector. It features a bright aluminium finish, rubber/resin high-tack adhesive and quality siliconised backing paper to allow the easy handling of short, cut lengths.

DO NOT stick the tape to the Speedfit pipe or fittings or those of any other manufacturer.

PIPE BENDING

Gentle bends can be made with pipe clips on either side of the curve, positioned to maintain the bend radius.



Tighter bends can be achieved by using the cold forming bends shown on page 15.

Internal Bending Springs are available in 10mm to 22mm sizes, see page 15.

It is also possible to bend Speedfit Pipe using a standard pipe bender. The pipe should not be heated with a blowlamp or hot air gun.

Minimum bend radii for Speedfit pipe are as follows:

Min Radius	Pipe Diameter			
	10mm	15mm	22mm	28mm
with Cold Forming Bends	30mm	75mm	110mm	-
with Clips	100mm	175mm	225mm	300mm

For bends of radii smaller than those shown, standard elbow fittings are recommended.

PIPE SUPPORT AND CLIPPING

There are two types of pipe clip in the Speedfit range.



Firstly, a nail clip is used for fixing to timber when running concealed pipe work i.e. underfloor or in a roof space. This clip takes less time to fit and is compact which allows pipework to be fixed close together when space is at a premium.



The second type uses a screw and therefore takes a little longer to fix. When pipes are required to cross over, it is possible to add a spacer to the clip. This will give room between the pipe and the wall to allow the pipes to cross over. If pipework needs to be insulated, using the spacer will give room for the lagging to be applied.

Pipe clips should not be fitted any closer than 60mm from the end of the fitting to allow for expansion. Pipes should always be adequately supported to prevent undue stress or side load on the fittings.

RECOMMENDED CLIP SPACING

For surface mounted pipes

Pipe Diameter	Clip Spacing	
	Horizontal Run	Vertical Run
10 - 15mm	300mm	500mm
22mm	500mm	800mm
28mm	800mm	1,000mm

PIPE SIZING

For general guidance on pipework sizing, please refer to BS6700 and BS5449 or the Institute of Plumbing Engineering Services Design Guide. Speedfit fittings are suitable for connection to pipe sizes within $\pm 0.1\text{mm}$ of nominal size.

The maximum heat carrying capacity and flow of Speedfit pipe, based on 1.2m/s velocity and an 11°C temperature drop is shown in the table below.

Pipe size	Max Capacity KW	Max Flow litres/sec	Headloss m/m pipe
10mm	1.948	0.042	0.283
15mm	5.941	0.129	0.139
22mm	13.604	0.295	0.084
28mm	21.991	0.478	0.062

PIPEWORK INSULATION

The insulation requirements for Speedfit pipe are the same as those for copper and should comply with BS6700 and BS5422.

CONCEALED PIPEWORK

The flexibility of Speedfit pipe gives it the ability to be threaded through concealed or inaccessible spaces without disruption to surrounding structures, making major savings in installation time.

Pipework can be "cabled" through drilled holes in joists and rafters. Therefore, pipework can be installed after floorboards have been laid, working below the floor before the ceiling is installed.

This makes site work far safer as the installer does not have to balance on open joists with the risk of dropping tools or equipment on other people below.



This will also eliminate the risk of damage by floorboard nails. There is no need for dry runs since pipe can be cut and connections made in-situ.

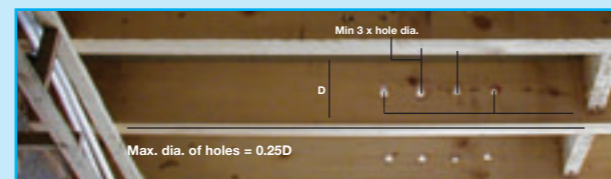
Rigid pipe, such as copper, can only be fed under floor in short lengths. However, Speedfit pipe, being flexible, can run from one fitting to another without having to install a connector in between.

Speedfit needs no jointing materials, eliminating the risk of fire from the use of a blowlamp, solder and flux.

TRADITIONAL JOISTS

Instructions on the drilling of joists is given in the Building Regulations Approved Document A, and summarised as follows:

- Holes should be no greater than 0.25 of the depth of the joist.
- Holes should be drilled at the neutral axis.
- Holes should not be less than 3 diameters (centre to centre) apart.
- Holes should be located between 0.25 and 0.4 times the span from the support.



TIMBER I BEAM JOISTS

Several types of joists are available and Speedfit recommends that specific manufacturers details are consulted. However, the following can be used for general guidance.

- Holes may be located vertically anywhere in the web, but leave 3mm web at the top and/or bottom of hole. Do not cut into joist flanges when cutting the web.
- If more than one hole is to be cut in the web, the distance between the edges of the holes must be at least 2x diameter of the largest hole.
- Generally joists are manufactured with 38mm perforated knockouts in the web at approximately 300mm centres along the length of the joist.

CROSS WEB JOISTS

Unlike I beam joists, pipe can be cabled anywhere within the open Web as no drilling is required. However, the top and bottom flanges must not be notched. Avoid damaging the outside diameter of the pipe as you cable through the metal cross web members.



TIMBER FRAMED CONSTRUCTION

Speedfit is well suited for timber frame construction. Ensure that the structural integrity is not compromised when installing the pipework.

If the pipe passes through an external wall, care must be taken not to damage the vapour barrier and should be installed on the inside of the thermal insulation layer.

If this is not possible, the use of conduit should be specified at the design stage.

STEEL FRAMED CONSTRUCTION

Speedfit is well suited for steel frame construction and care should be taken when installing the pipework.

All runs should be installed through preformed holes in the structure and protected by a rubber or plastic grommet.

Where clipping of pipework is restricted, cable ties may be used to secure the pipe.

As with all installations, make sure that any pipework passing through walls and floors does not affect the fire resistant properties of the structure.

DRY LINED WALLS

Speedfit pipework can be easily cabled through studwork and within wall systems as well as behind "dot and dab" plasterboard installations. Speedfit 10mm Barrier Pipe is most commonly used to feed radiators.

If incorporating fittings in this way, collet covers or collet clips must be used with the Standard range of fittings.

WET PLASTER

To prevent surface damage to the plaster caused by expansion and contraction of Speedfit pipes, it is important to ensure that all Speedfit pipework is channelled into the wall and protected with appropriate sleeving. Alternatively, the pipework can be surface mounted and boxed in if required for aesthetic appearance.

LAYING OF PIPE IN CONCRETE AND MASONRY

Speedfit pipe and fittings can be laid in concrete and masonry providing they are installed in conduit pipe with access boxes for the fittings. As stated in Water Regulation Schedule 2.7 and BS 8000 : Part 15, fittings and pipe should be removable for possible replacement. Insulation is also recommended to protect against heat loss and the effects of frost.



Speedfit Conduit Pipe is supplied in either 15mm or 22mm in coil lengths of 25m or 50m. The flexible convoluted pipe has an outside diameter of 24mm and 30mm.

EXPOSED PIPEWORK

On long exposed runs of pipework, the expansion of Speedfit pipe when warm (1% on length between 20 to 82°C) can cause it to sag between clip fixings. When this is undesirable, pipework can be boxed in or replaced with rigid copper pipe. Speedfit pipe and fittings are stabilised to withstand limited exposure to ultra-violet radiation in sunlight but are not designed for permanent direct exposure. Under such conditions painting or lagging is required. Pipe and fittings should also be lagged to prevent frost damage.

CHEMICAL EFFECTS

Only water or oil based paints should be used. Do not allow Speedfit fittings to come into contact with cellulose based paints, paint thinners or strippers, solder flux or acid based descalents or aggressive cleaning products. If there is a risk of any chemical treatments coming into contact with Speedfit, please contact the Technical Advisory Service first to check compatibility.

FLUXES AND SPEEDFIT

JG Speedfit does not recommend that fluxes of any type come into contact with our pipe and fittings. However, if fluxes are to be used in an environment where Speedfit is installed then we recommend installers use non-acidic and zinc chloride free fluxes such as Fernox Flux.

ACOUSTIC

Properly installed, Speedfit pipes are virtually silent in operation and do not resonate; they absorb the acoustic vibrations and pressure waves created by cavitations, water hammer, float operated valve oscillation and other hydraulic effects. The inherent flexibility of Speedfit pipe effectively eliminates these troublesome problems, including those that occur when, due to thermal expansion, metal pipes rub against structural members and where long, straight runs of rigid pipe amplify water borne noise.

PROTECTION AGAINST RODENTS

When used in locations vulnerable to rodent attack, all plastic pipes and fittings should be adequately protected within sealed ducts.

Speedfit products along with other materials such as electrical cables may be damaged if rodents are present. If vermin infestation is suspected then a rodent exterminator should take appropriate action.

BIOLOGICAL

No taste, colour, odour or toxicity is imparted to water by Speedfit components, nor do they promote microbiological growth.

In accordance with BS7291: Part 1 Clause 6.7, the opacity of both pipes and fittings allows insufficient light to pass for the growth of algae

Tests within the Water Regulations Advisory Scheme, have approved Speedfit pipe and fittings to BS 6920 for water quality.

SYSTEM TESTING

On completion of the plumbing and heating system it is essential that system checking and a hydraulic wet test takes place. Connections to boilers, radiators and sanitary ware should first be capped or plugged.



Testing should be carried out at 2 bar for 10 minutes followed by 10 bar for 10 minutes.

This testing combined with other relevant checks, should reveal most system problems. Any components within the system not designed to take these pressures should be disconnected.

Before carrying out a pressure test ensure all Speedfit pipe and fittings are installed correctly. Speedfit Barrier Pipe is printed with insertion marks to help ensure full insertion has been achieved.

Remember pressure testing is NOT a substitute for making sure fittings are clean and free of any grit, dirt or swarf and the pipe is correctly inserted (see Making a Good Connection, on page 06).

SYSTEM COMMISSIONING AND FLUSHING

With existing systems, flushing prior to the use of Speedfit is essential to remove any harmful contamination or chemical residues from elsewhere in the system.

For the installation of central heating systems flushing procedures must be in line with BS7593 code of practice for treatment of water in domestic hot water heating systems.

Flux residues used in the soldering of capillary fittings are very corrosive. Dirt and grit, which can enter the system when Speedfit pipe is being pushed through underfloor or across a roof space, must be removed.

During the commissioning of a heating system, all air must be removed from the system before the boiler is allowed to fire. This will ensure pockets of air do not cause localized overheating within the system as this could have a detrimental affect on the pipework and boiler.

For further advice on chemical flushing agents and inhibitor treatments, the following manufacturers should be contacted: Fernox Manufacturing Ltd., 01799 550811 or Sentinel Betz Dearborn Ltd., 0151 420 9595.

TECHNICAL ADVISORY SERVICE

The JG Speedfit Technical Advisory Service is available to assist and advise on all aspects of using the Speedfit system. The service is available between 8.00am and 4.30pm, Monday to Friday on Telephone No. 01895 425333 and Fax No. 01895 425350. Products within this Product Guide are designed for use within UK plumbing and heating installations or in other countries where similar installation requirements apply. For information on products suitable for use in other countries please consult our Technical Advisory Service.

We take pride in the quality of our products and all complaints are investigated thoroughly. If you have a problem with a Speedfit Product please return both fitting and pipe to us for investigation. We will need at least 50mm of pipe to ensure an accurate analysis. If there is a suspicion that the pipe is faulty, please provide marking details from the pipe.

COMMON PROBLEMS AND IDENTIFICATION

Problem: Burst or melted pipe.

Pipe will be distorted showing either a 'Parrot beak' look or a long opening with the edges of the pipe melted in a wave shape.

Identification: A 'Parrot beak' will have been formed by the pipe bursting due to the water freezing. If the Pipe has a melted appearance it will have been subject to a temperature in excess of 128 degrees Celsius. This will have been caused by direct contact with a heat source such as a blowtorch or flue pipe or by water or steam within the system rising above safety levels.

Problem: A fitting or part of a fitting dissolved - the fitting may have blown off the pipe and may have missing component parts.

Identification: The fitting will have failed because of a chemical attack. The most common attack is from acid based solder flux running down into the fitting during soldering of a nearby copper fitting or flux coming into contact with the fitting in some other way.

Problem: Weep from fitting.

Identification : The pipe has not been fully inserted up to the pipe stop or one or both of the 'O' rings have been damaged by burrs or sharp edges on the end of pipe. See 'What Not to Do' on page 06.

Problem: The fitting has blown off the pipe. Fitting is missing the collet, the pipe insert is still inside the fitting after the pipe has come out.

Identification: If this happens on first fix, the most likely reason is that the pipe has not been fully inserted into the fitting, up to the pipe stop, and the system has not been pressure tested.

If the collet (gripping device) is missing everything will blow out. If the collet is there and the pipe support is still inside the connector but the pipe has still blown out, this means that full insertion had not been accomplished.

UNDERFLOOR HEATING

The Speedfit Underfloor Heating System has been designed to be as quick and easy as possible to install with component parts manufactured to UK and European standards.

Underfloor heating provides the most comfortable even warmth of any heating system. It is economical to run and virtually maintenance free. The principle has been with us since Roman times but is still the system of choice in some European countries, accounting for 70% of installations.

The Speedfit System has water being pumped from a boiler to a pump pack, where it is mixed to approximately 50°C then distributed via a manifold to heating circuits made using Speedfit Barrier Pipe. The pipe is laid in concrete or suspended just below the surface of the floor.

In concrete floors, the pipe is laid on insulation and then covered with a screed on which can be laid almost any type of floor covering.

For timber floors, spreader plates are laid between the joists and the floor decking or on the underside of the floor. Speedfit Pipe is pushed into the grooves on the plates.

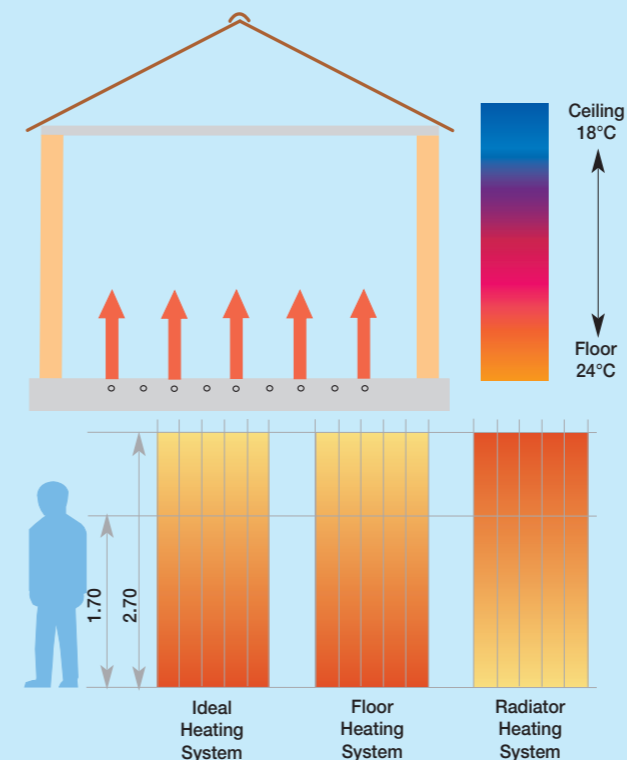
The floor area is typically warmed to between 25°C and 28°C, providing an even distribution of heat at only slightly higher than room temperature. The system is controlled by one or more thermostats which signal the Pump Pack when heat is required.

UNDERFLOOR HEATING SYSTEM

An Underfloor Heating System heats mainly by radiation. Radiant energy is emitted by the floor giving an even distribution of heat. No cold spots, hot ceilings or cold feet.

The overall effectiveness of an UFH heating system can be seen below.

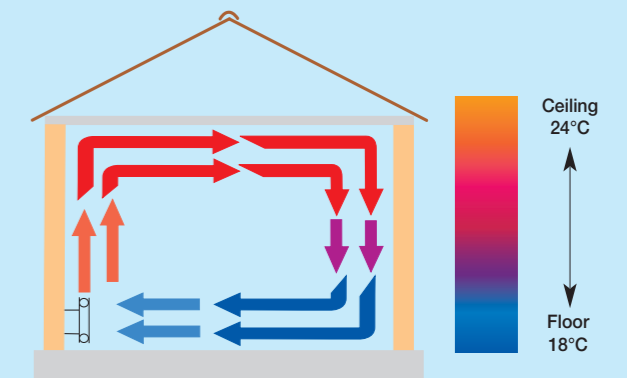
The heat is concentrated where it is most needed for comfort and efficiency.



RADIATOR SYSTEM AND HEAT GRADIENT

By contrast, radiators transfer heat from a relatively small area at a much higher temperature than the space being heated.

The radiator system heats mainly by convection. This results in the floor being the coolest place in the room, with the mass of warm air at ceiling level.



FEATURES & BENEFITS

The Speedfit Underfloor Heating System offers many benefits to the consumer. These include:

Installation

It is simple to install, requiring the minimum of installation effort and little maintenance.

Comfort

The system uses radiant heat, the most comfortable form of heating, to give a good even distribution of warmth over the whole room.

Space

The system is unobtrusive and space saving which means every square metre of floor and wall space can be fully utilised giving freedom of interior design.

Noise

Compared to radiator systems the system is virtually silent running.

Health

Dust is minimised reducing the problem of house dust mites. Reduced numbers of hot surfaces and sharp edges minimise risk of burns or injury.

Economic

Underfloor Heating Systems are designed to operate at lower temperatures than radiator systems, resulting in reduced energy consumption and lower heatloss from the building structure.

Control

The system is easy to control and the small temperature difference between the floor and air means the system is virtually self - regulating.

Environment

Underfloor heating is suitable for use with the most energy efficient and environmentally friendly heating systems including condensing boilers, solar power and heat pumps.

FLOOR FINISHES AND COVERING

The Speedfit Underfloor Heating System is suitable for most floor finishes, including ceramic tiles, carpets, vinyl and laminate.

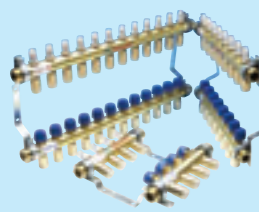
The thermal resistance of floor covering will have a marked effect on the performance of the heating system.

Advice on the use of floor coverings and their effect on the performance of a system is laid out in the Speedfit Underfloor Heating Manual.

SPEEDFIT SYSTEM COMPONENTS

Speedfit Underfloor Heating Products have been designed and are manufactured to European and UK Standards, including ISO 9001 and DIN4726.

MANIFOLDS



PART No.	DESCRIPTION	PACK QTY
JGUFHMAN4	4 ZONE MANIFOLD	1
JGUFHMAN6	6 ZONE MANIFOLD	1
JGUFHMAN8	8 ZONE MANIFOLD	1
JGUFHMAN10	10 ZONE MANIFOLD	1
JGUFHMAN12	12 ZONE MANIFOLD	1

Supplied with Speedfit Pipe Inserts and Collet Clips.

Speedfit Manifolds are manufactured from high quality DZR brass to the highest UK and European standards.

A unique feature is that connections to the heating pipes are Speedfit Push Fit, offering much reduced installation time. Flow and return rails are offset and the angles can be altered, all making for an easy installation.

The manifolds are complete with adjustable flow gauge, drain valve and air bleed valve. They are pre assembled on wall brackets and supplied with screws and plugs.

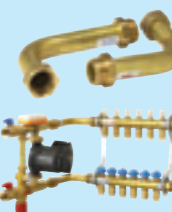
MANIFOLD EXTENSION KIT



PART No.	DESCRIPTION	PACK QTY
JGUFHMANEXT	MANIFOLD EXTENSION KIT	1

Enables a manifold to be extended by one or more zones.

MANIFOLD ELBOW CONNECTOR



PART No.	DESCRIPTION	PACK QTY
JGUFHMANELB		1 PAIR

Enables a Pump Pack and Manifold to be installed at 90° to each other.

PUMP PACK

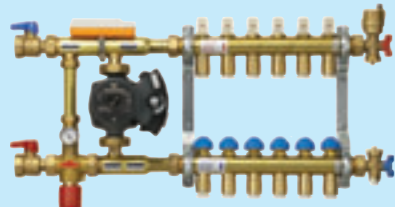


PART No.	DESCRIPTION	PACK QTY
JGPUMPPACK	PUMP PACK	1

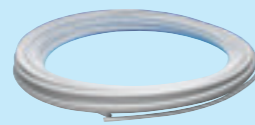
Manufactured in DZR brass, the pack consists of a pump, mixing valve and overheat temperature thermostat.

Hot water is taken from the boiler, mixed to the required temperature and circulated via the manifold to the heating circuits, the temperature and volume of water is constantly altered to maintain the requirements of the system. Flow temperature can be altered by turning the hand wheel on the mixing valve unit.

The pack is light and compact so a wall bracket is not needed and flat face unions make for an easy connection to the manifold.



PEX BARRIER PIPE



PART No.	DESCRIPTION	SIZE	PACK QTY
15BPEX-50C	BARRIER PIPE	15MM X 50M	1
15BPEX-100C	BARRIER PIPE	15MM X 100M	1
15BPEX-120C	BARRIER PIPE	15MM X 120M	1
15BPEX-150C	BARRIER PIPE	15MM X 150M	1

POLYBUTYLENE BARRIER PIPE



PART No.	DESCRIPTION	SIZE	PACK QTY
15BPB-50C	BARRIER PIPE	15MM X 50M	1
15BPB-100C	BARRIER PIPE	15MM X 100M	1
15BPB-120C	BARRIER PIPE	15MM X 120M	1
15BPB-150C	BARRIER PIPE	15MM X 150M	1

Offered in PEX or Polybutylene, Speedfit Pipe has an inner barrier to prevent the ingress of atmosphere, it is manufactured and Kitemarked to British Standard BS7291 : Parts 1,2 & 3: Class S.

It is lightweight and flexible making it especially suitable for underfloor heating installations.

For screed systems, the pipe is attached directly to insulation with staples, floor clips or mounting rails.

Spreader Plates are available for timber flooring using either traditional joists or TJI Joists.

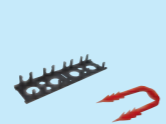
PIPE FIXING SYSTEMS

Speedfit offer several ways of securing pipe to the insulation layer in a screeded floor.



PART No.	DESCRIPTION	SIZE	PACK QTY
JGUFHSTAPLE	PIPE STAPLES	60mm	300
JGUFHGUN	STAPLE GUN	-	1

Black Staples are barbed to ensure a secure fixing to the insulation. Easy fixing is carried out by using a Staple Gun, securing pipe to the insulation with an easy repeatable action.



PART No.	DESCRIPTION	PACK QTY
JGUFHRAIL	2 METRE LONG	16
JGUFHPIN	RAIL PINS FOR ABOVE	100

Mounting Rails offer a quick installation of 15mm pipe. Supplied 2 metres long, the rails are pre scored every 100mm for easy cutting. The rail can be secured to the insulation using red Rail Pins.



PART No.	DESCRIPTION	PACK QTY
JGUFHCLIP	FLOOR CLIP	100
JGUFHTOOL	FOR EASY FIXING OF FLOOR CLIPS	1

Floor Clips screw easily into insulation, they are best installed using a Fixing Tool.

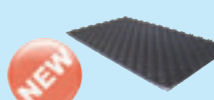
EDGE INSULATION STRIP



PART No.	DESCRIPTION	PACK QTY
JGUFHEDGE	25 METRE ROLL	1

Supplied in 25 metre rolls, the edge insulation strip is placed round the edge of each room to provide insulation of the heated floor.

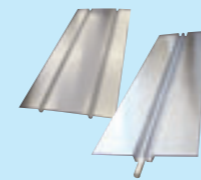
FLOOR PANELS



PART No.	DESCRIPTION	PACK QTY
JGUFHTILE	Floor Tile 1400mm x 800mm	12

Supplied in packs of 12, Speedfit Floor Tiles have an 11mm layer of insulation for support and additional thermal insulation.

SPREADER PLATES



PART No.	DESCRIPTION	PACK QTY
JGUFHSP400	390mm x 1000mm	1
JGUFHSP250	390mm x 250mm	1
JGUFHSP165	165mm x 1000mm	1

Spreader Plates are available for timber flooring using either traditional joists or TJI Joists.

Spreader Plates 390 x 1,000mm and 390 x 250mm are laid across traditional joists and fixed in place using a hand stapler.

Spreader Plates 165 x 1000mm can be used with traditional and TJI joists. They are fixed to the underside of the floor using staples or screws.

Speedfit Pipe is fixed in the grooves of the plates.

When the plates and pipework have been installed, insulation is placed in the void below the plates to minimise downward heatloss.

ACTUATOR VALVE

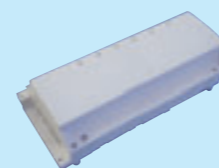


PART No.	DESCRIPTION	PACK QTY
JGUFHA(240 v)	240 v CIRCUIT ACTUATOR VALVE	1

Actuators are attached to the individual heating circuits on the manifold, providing individual control to a room or zone.

They open or close the flow of water and are controlled by a thermostat or programmer.

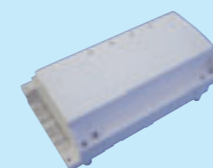
MASTER WIRING CENTRE



PART No.	DESCRIPTION	PACK QTY
JGUFH4ZM	MASTER WIRING CENTRE 4 ZONE	1

Used to connect the wiring from thermostat, actuators, boiler and pump and manage the control of the underfloor heating system.

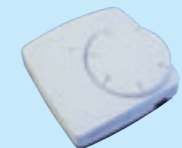
WIRING CENTRE SLAVE



PART No.	DESCRIPTION	PACK QTY
JGUFH4ZS	WIRING CENTRE SLAVE 4 ZONE	1
JGUFH6ZS	WIRING CENTRE SLAVE 6 ZONE	1

Connects to a Master Wiring Centre to give an additional 4 or 6 zones.

ROOM THERMOSTAT



PART No.	DESCRIPTION	PACK QTY
JGUFHTH	ROOM THERMOSTAT WITH SET BACK TEMPERATURE REDUCTION MODE	1

Works in conjunction with a Centralised or Remote System Timer

A mains operated room thermostat. The temperature is set manually for 'daytime' temperature. A 'set back' mode, reducing the temperature by 4°C, is controlled by a Centralised or Remote System Timer. The Thermostat has a manual override for permanent 'Daytime' or permanent 'Set back' temperature and can be used in conjunction with a Wet Area Probe.

WET AREA PROBE + COVER



PART No.	DESCRIPTION	PACK QTY
JGUFHTHKIT	WET AREA PROBE + COVER	1

Used in conjunction with the Room Thermostat with set back control or Digital Room Thermostat, the kit is used in areas where the use of 240v would be a problem.

A 3 metre long cable connects a non electrical probe to a room thermostat.

DIGITAL ROOM THERMOSTAT



PART No.	DESCRIPTION	PACK QTY
JGUFHTHDIG	DIGITAL ROOM THERMOSTAT	1

Works in conjunction with a Centralised or Remote System Timer

A mains operated room thermostat. The temperature is set manually to 'Daytime' temperature and reduced by 4°C to 'Setback' temperature by a Centralised or Remote System Timer. It has a manual override for permanent 'Daytime' or permanent 'Setback' temperature and can be used in conjunction with a Wet Area Probe.

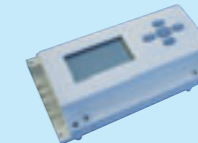
PROGRAMMABLE ROOM THERMOSTAT



PART No.	DESCRIPTION	PACK QTY
JGUFHPRS	PROGRAMMABLE ROOM THERMOSTAT	1

The Programmable Room Thermostat is a fully programmable electronic room thermostat which can be set to give each zone an individual time and temperature control.

CENTRALISED SYSTEM TIMER



PART No.	DESCRIPTION	PACK QTY
JGUFHTIMER-C	CENTRALISED SYSTEM TIMER	1

To be used with a Speedfit Set Back Thermostat.

If specified, one timer is needed for each manifold in the system. The timer provides centralised control of the set back functions for the whole manifold via a digital programmer. The timer acts as a timed switch to alternate between 'daytime' and 'Set Back' time.

REMOTE SYSTEM TIMER



PART No.	DESCRIPTION	PACK QTY
JGUFHTIMER-R	REMOTE SYSTEM TIMER	1

A 4 channel programmer. Ideal for installations where the system timer needs to be located away from the manifold. Can also be used, via a Master Wiring Centre, to control the set back for up to 4 Speedfit Room Thermostats. On a larger system the Remote System Timer can be used to replace a number of individual programmers, controlling say underfloor heating, radiators and hot water.

UNDERFLOOR HEATING SPARE PARTS

PART No.	DESCRIPTION	PACK QTY
SPUFH1	MIXING VALVE CARTRIDGE KIT	1
SPUFH2	PUMP PACK FLOW TEMP GAUGE	1
SPUFH3	OVER HEAT STAT	1
SPUFH4	MANIFOLD FLOWMETER	1
SPUFH5	MANIFOLD BALANCING VALVE	1
SPUFH6	DUST CAP FOR BALANCING VALVE	1

SPEEDFIT SYSTEM COMPONENTS

SINGLE ROOM CONTROL UNIT

PART No.	DESCRIPTION	PACK QTY
JGROOMPACK	SINGLE ROOM CONTROL UNIT	1

The new Speedfit Underfloor Heating Control Unit is the ideal way to provide heating to a conservatory or room extension, up to 30m².

The unit is pre-assembled and pre-wired to allow for a fast and simple installation.

The control unit has integral ball valves to allow for isolation from the primary heating system, an adjustable blending valve and a 6 metre head circulation pump. An anti-vibration mounting bracket ensures silent operation.

Speedfit push in connections make for a fast connection to pipework.

Speedfit recommend connection to the main central heating flow and return distribution system, but it is also possible to connect to the nearest radiator supply pipe.

A full and detailed installation guide is provided with each unit.

The Speedfit Underfloor Heating Control Unit is suitable for use when:

- The boiler serving the existing heating system has the capacity to take the extra output from 2KW to 3KW
- The boiler is compatible with the additional pump
- The maximum area to be heated is 30 sq metres

The Control Unit is designed to be used with Speedfit Barrier Pipe. The amount of pipe needed is determined not only by the size and shape of the room but by the resistance of the floor finish to heat transfer.

The table below shows examples of low resistance (tiles) and high resistance (carpet with underlay) finishes.

COIL SIZE TO AREA

Part No.	Coil Size (m)	Staples Required	Max Area (m ²)	Temp/Tiles (°C)	Temp/Carpet (°C)	Max Output (KW)
15BPEX-150C	150	240	20	44	58	1.8
15BPEX-120C	120	200	17	44	58	1.5
15BPEX-100C	100	170	14	44	58	1.2
15BPEX-50C	50	100	7	44	58	0.6

SINGLE ROOM UNDERFLOOR HEATING PACK

PART No.	DESCRIPTION	PACK QTY
JGUFHPACK20	UNDERFLOOR HEATING PACK	1

For conservatories or room extensions up to 20m².

- Pack contains:
- Single Room Control Unit
 - Programmable Room Thermostat
 - 15mm x 150m coil Polybutylene Pipe with Pipe Clips and Pipe Inserts

SINGLE ROOM UNDERFLOOR HEATING PACK

PART No.	DESCRIPTION	PACK QTY
JGUFHPACK30	UNDERFLOOR HEATING PACK	1

For conservatories or room extensions up to 30m².

- Pack contains:
- Single Room Control Unit
 - Programmable Room Thermostat
 - 2 x 15mm x 100m coils of Polybutylene Pipe
 - 300 x 15mm Pipe Clips
 - 8 x 15mm Pipe Inserts
 - 2 x 15mm Speedfit Equal Tees
 - 2 x 15mm Speedfit Swivel Elbows

INSTALLATION IS QUICK AND EASY

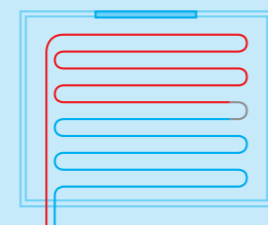
SOLID FLOOR INSTALLATIONS SCREEDS

The screed is an important and integral part of the UFH system, transferring energy from the pipes to the area to be heated. The response of this 'thermal mass' will depend on its depth and make up.

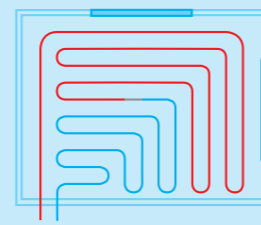
The usual depth of screed is 65 - 75mm thick but it is possible depths can be reduced to assist in improving performance.

PIPE LAYOUT IN SOLID FLOOR INSTALLATIONS

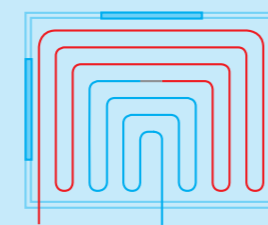
The shape of the room and the position of the outside walls and windows will determine the pattern of the pipe layout. The counterflow pattern is recommended although other options are shown below.



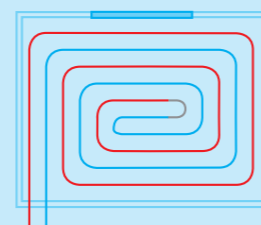
Single Serpentine



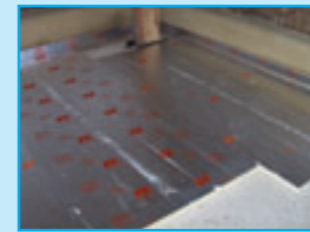
Double Serpentine



Triple Serpentine



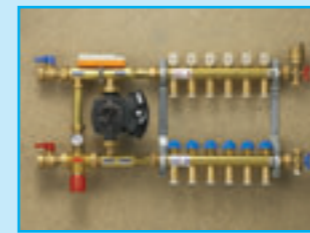
Counterflow



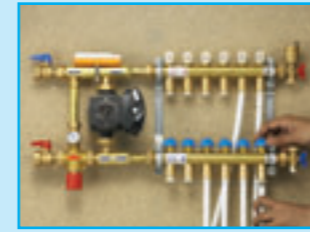
The floor is cleared of dust and debris and insulation is laid across the area.



Speedfit Pipe is laid in a pre-determined pattern and fixed in position with staples.



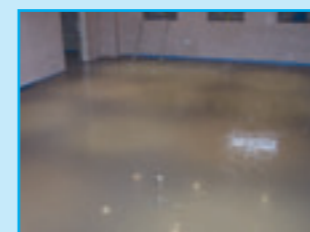
Fit the Speedfit Manifold to the wall and connect the Pump Pack.



Connect the ends of the pipes to the Manifold.



The system is filled and pressure tested.

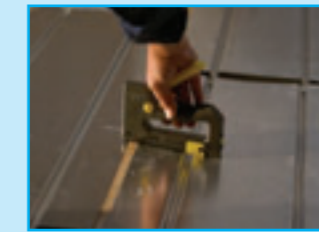


The screed should be laid whilst the pipe is pressurised. The underfloor heating system should not be used to dry the concrete screed.

TIMBER FLOOR INSTALLATIONS



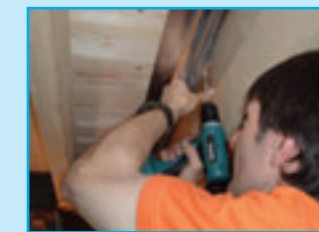
Spreader plates are available for timber flooring which uses either traditional joists or TJI joists.



Spreader plates 390mm x 1,000mm and 390mm x 250mm are designed for use with traditional joists at 400mm centres. They are laid across the joists and fixed in place using a hand stapler. The 15mm Speedfit Pipe is pushed into the grooves in the plate and the floor decking laid on top.



Insulation can be placed between joists to the underside of the plates either before or after the plates have been laid.



Spreader plates 165mm x 1000mm can be used with either traditional or TJI joists and with the floor already in place. They are fixed to the underside of the floor using staples or screws. The Speedfit Pipe is fixed in to the groove.



When the plates and pipework have been installed, the insulation is placed in the floor void to minimise downward heat loss.

UNDERGROUND FITTINGS

APPLICATIONS

Speedfit underground fittings for metric size polyethylene cold water service pipe have been designed for connection of:

1. **Blue MDPE pipes to BS 6572** - used for underground service pipes for potable water.
2. **Black MDPE pipes to BS6730** - used for conveyance of potable water above ground or for industrial services above or below ground.
3. **Pipe to ISO 161/1, ISO 3607 and DIN 16893.**

Making the connection could not be easier. All you need is the pipe, the fitting and a pair of hands. The range is designed to provide a long service life and includes adaptors for screwed pipe, copper and imperial sized LDPE.

INSTALLATION BENEFITS

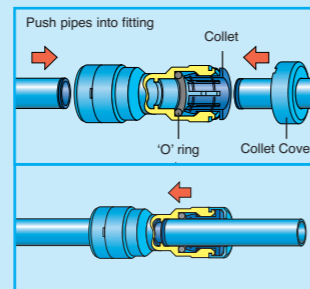
- Easy to use in confined spaces, no tools required.
- Fast installation with resulting cost savings.
- Lightweight and slimline.
- Ready for immediate installation, no dismantling.
- No adjustments required after fitting.
- Adaptors for screwed pipe, copper and imperial LDPE.

PERFORMANCE BENEFITS

- Maintenance free.
- Durable with high resistance to impact.
- Patented collet ensures high resistance to pull out.
- Lead free and non toxic.
- Will not support biological growth.
- A reliable and trouble free leakproof connection.

MAKING A GOOD CONNECTION

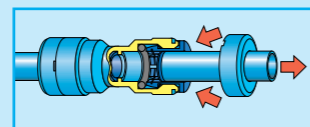
Cut pipe square using pipe cutters, remove burrs and sharp edges. Always use a pipe insert.



The fitting is supplied ready for installation and requires no adjustment. Push the pipe into the fitting.

Push the pipe up to the pipe stop. The collet has teeth that grip the pipe whilst the 'O' ring provides a permanent leak proof seal.

TO DISCONNECT

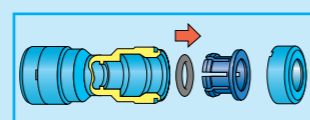


Ensure that the system is depressurised. Release and pull back collet cover. Push in collet square against the face of fitting.

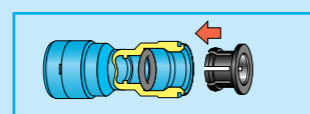
With the collet held in this position, the pipe can be withdrawn. We recommend the replacement of the 'O' ring and collet before making a new connection.

CONNECTING TO IMPERIAL SIZE LDPE

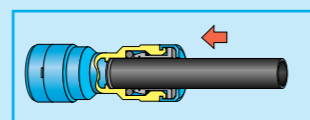
Using the Inch Change Kit shown on page 28.



Remove collet cover, pull out metric size collet and 'O' ring. Keep with metric pipe support liner for future use.



Carefully push imperial size 'O' ring and collet into position, ensuring seal is clean before insertion.



Replace the snap-fit collet cover and, having inserted the imperial pipe support, connect the pipe as shown above.



PRODUCT RANGE

EQUAL STRAIGHT CONNECTOR



PART No.	SIZE MM
JG401B	20
JG402B	25

Cold water only

REDUCING STRAIGHT CONNECTOR



PART No.	SIZE MM
JG501B	25 x 20

Cold water only

MALE ADAPTOR



PART No.	SIZE
JG101B	20mm x 1/2" BSP
JG102B	25mm x 3/4" BSP

Cold water only

FEMALE ADAPTOR



PART No.	SIZE
JG4501B	20mm x 1/2" BSP
JG4502B	25mm x 3/4" BSP

Cold water only

PLUGS



PART No.	SIZE MM
JG801E	20
JG802E	25

Cold water only

EQUAL ELBOW



PART No.	SIZE MM
JG301B	20
JG302B	25

Cold water only

STEM ELBOW



PART No.	PIPE OD	STEM OD
JG222025B	20mm	25mm
JG222525B	25mm	25mm

NEW

EQUAL TEE



PART No.	SIZE MM
JG201B	20
JG202B	25

Cold water only

PE-COPPER COUPLER



Used to connect PE Pipe to copper or Speedfit Plumbing Pipe

PART No.	SIZE MM
JG601B	20 x 15
JG603B	25 x 15
JG602B	25 x 22

Cold water only
Suitable for Tables X & Y Copper

PIPE INSERT



PART No.	SIZE MM
UTS147 - DB	20
UTS197 - DB	25

INCH CHANGE KIT



PART No.	SIZE MM
JGK01E	1/2"
JGK02E	3/4"

Cold water only

To convert metric size fittings for use with imperial size LDPE to BS1972 Class C or Class D

SPARE PARTS

COLLETS



PART No.	SIZE MM
20 UPC	20
25 UPC	25

'O' RING



PART No.	SIZE MM
20 UOR	20
25 UOR	25

TECHNICAL CHECKLIST - PLUMBING AND HEATING FITTINGS

Fittings and pipe should be kept clean and undamaged before use.

- **Sizes.** 10mm to 28mm diameter.

- **Pipes.** Speedfit fittings can be used with:
Copper pipe to BS EN 1057
Speedfit Barrier Pipe to BS7291.

Speedfit fittings cannot be used on stainless steel pipe.

- **Standards.** Speedfit products are designed and manufactured under a fully integrated system assessed by B.S.I. to BS EN ISO9001. They are approved by the WRAS and BBA. Speedfit PEM, PSE and SFM Fittings and Speedfit Barrier Pipe are Kitemarked to BS7291 Parts 1, 2 and 3, Class S. (Licence No. KM39767)

- **Applications.**

Mains fed and indirect cold water systems
Vented and unvented hot water systems
Vented and sealed central heating systems

- **Do not use for Gas, fuel oil or compressed air applications.**

- **Working temperatures and pressures**

Application	Usual working temperature, °C	Maximum working temperature, °C	Maximum working pressure, bar
Cold Water (indirect and direct mains)	20	20	12
Central Heating	82	105, short term malfunction at 114	3
Hot Water (including unvented cylinders)	65	95	6

- **Burst Pressure (fittings).** With copper or plastic pipe at 20°C: Speedfit fittings used with copper or Speedfit Barrier Pipe will withstand pressures well in excess of normal service conditions.

- **High temperatures.** Can withstand 114°C intermittently for short periods. The Speedfit system should not be used on an uncontrolled heat source.

- **Insulation.** Should comply with BS6700 and BS5422, as for copper.

- **Minimum bend radii (PEX)**

Pipe diameter	10mm	15mm	22mm	28mm
Min radius with clips	100mm	175mm	225mm	300mm
Min radius with cold forming bend	30mm	75mm	110mm	-

- **Clip spacing (in mm).**

For surface mounted pipes

Pipe Diameter	Clip Spacing	
	Horizontal Run	Vertical Run
10 - 15mm	300mm	500mm
22mm	500mm	800mm
28mm	800mm	1,000mm

Where pipe is concealed, clipping may only be required where necessary.

- **Expansion (PEX pipe).** 1% on length between 20°C and 82°C.

- **Flow rates.** Comparable with metal systems.

- **Cleaners, inhibitors and descalents.** For advice on the replenishment of additives such as corrosion inhibitors, the following manufacturers should be contacted: Fernox Manufacturing Limited on 01799 550811 or Sentinel, BetzDearborn Limited on 0151 420 9595.

- **Paint and Chemicals.** Use only water or oil based paint. Collet covers prevent paint ingress into fittings. **DO NOT ALLOW CONTACT WITH** oil based jointing compounds, cellulose based paints, paint thinners, paint strippers, solder flux, acid based descalents or aggressive cleaning products.

- **Solder Flux.** No fluxes of any types should come into contact with JG Speedfit Pipe and Fittings. If fluxes are to be used in an environment where Speedfit is installed, then (1) extreme care should be taken to ensure that no such contact takes place and (2) JG recommend installers only use fluxes tested and approved in writing in advance by JG. At the date of this publication, the only such approved flux is Fernox Flux.

- **Chlorine.** Speedfit is not suitable for use in systems where the water contains high levels of chlorine. e.g. swimming pools, fountains etc.

- **Exposure to sunlight.** Speedfit products, when used indoors, are not affected by sunlight. When used outdoors protect from ultra violet light by lagging or painting.

- **Pipe clips.** Pipe clips should not be fitted any closer than 60mm from the end of the fitting. Pipe should be adequately supported by pipe clips to prevent undue stress (side load) on fittings.

- **Pipe inserts.** Must be used on all installations when using plastic pipe and should be fully inserted. Only use a Speedfit Insert with Speedfit Pipe.

- **Metal Joists.** When 'cabling' plastic pipe through metal joists ensure rubber grommets are in place to prevent damage to pipe. Use of collet covers or collet clips on fittings recommended.

- **Connection to boilers.** A minimum 1000mm run of copper pipe must be installed between the boiler and the Speedfit system, as per BS5955: Part 8.

- **Connection to copper pipe.** 450mm is the minimum distance to make a solder connection on copper pipe inserted into a Speedfit Fitting. Ensure that any residual flux solder does not come into contact with the fitting.

- **Concrete and masonry.** Speedfit pipe and fittings can be laid in concrete and masonry providing they are installed in conduit pipe with access boxes for the fittings. This is to enable the pipe to expand and provide accessibility for both pipe and fittings. As stated in Water Regulation Scheme 2.7 and BS 8000 : Part 15, fittings and pipe should be removable for possible replacement. Insulation is also recommended to protect against heat loss and the effects of frost.

- **Electrical continuity.** If Speedfit is used in an existing metal system which may have been used for earthing, electrical continuity should be reinstated.

- **Valves and taps.** Plastic 15mm and 22mm valves and taps available from JG Speedfit Ltd are not suitable for central heating installations.

- **Collet Covers.** Collet covers provide added security against pipe disconnection, e.g. the fittings coming into contact with rigid surfaces and behind dry-lining walls. They are offered in white as standard and in red or blue to provide colour coding of pipe.

- **Collet Clips.** Grey collet clips are used with standard fittings to prevent accidental pipe disconnection. Red or blue clips provide colour coding of pipe. Red and blue clips should not be used to prevent accidental release of pipe.

- **System testing.** To ensure the pipework and fittings have been installed correctly, whether it be on a new or extended system, it is essential that the system is checked and hydraulically wet tested. Testing should be at 2 bar for 10 minutes and 10 bar for 10 minutes. This testing, combined with other relevant checks, should reveal installation problems and is regarded as good plumbing practice. However, system testing should not be regarded as a substitute for correct installation (see also "Making a Good Connection").

- **System flushing.** As is usual practice for any plumbing installation, flushing of the system prior to the use of Speedfit is recommended to remove any contaminants/chemical residue from elsewhere in the system.

- **British Gas Service has accepted the John Guest Speedfit fittings as being suitable for open vented and sealed central heating systems and as eligible for acceptance onto its service contracts.**

- **Vermin.** Speedfit products will need special protection in vermin infested areas.

- **Maximum Torque figures (BSP & BSPT).** Plastic threads are not generally as strong as brass threads. Customers and end users should be aware of this when choosing products for their applications. Overtightening of plastic threads will cause undue stress and eventual cracking and leakage. The maximum torque figures for BSP and BSPT threads used on Speedfit plumbing products in mating threads conforming to the relevant BS or International thread standards are shown below.

Threads	Size	Maximum Torque
Plastic	1/2"	3.0 Nm
	3/4"	4.0 Nm
Brass	1/2"	4.0 Nm
	3/4"	5.0 Nm

It is recommended that all installations are checked prior to use to determine that seal has been made.

- **Side Loads.** Fittings should not be subject to excessive side loads and they should not be used as support brackets. Tubing and fittings should be adequately supported to prevent excessive side loading.

TECHNICAL CHECKLIST - UNDERFLOOR HEATING

- **Applications.** Underfloor Heating Installations in solid or timber floors.

- **Pipes.** 15mm JG Speedfit Barrier Pipe to BS 7291, Parts 1, 2 and 3 Class S.

- **DO NOT USE Speedfit UFH Products for Gas, fuel oil or compressed air applications.**

- **Floor Insulation.** Should be a suitable material and thickness to comply with current regulations.

- **Minimum Bending Radii.** For Speedfit B-PEX Pipe is 175mm.

- **Expansion (PEX - Pipe).** 1% on length between 20°C and 82°C.

- **Cleaners, Inhibitors and Descalents.** For advice on the replenishment of additives such as corrosion inhibitors, the following manufacturers should be contacted Fernox Manufacturing Limited on 01799 550811 or Sentinel, BetzDearborn Limited on 0151420 9595.

- **Paint and Chemicals.** Only use water or oil based paint. DO NOT ALLOW CONTACT WITH cellulose based paints, paint thinners or strippers, solder flux or acid based descalents or aggressive household cleaning products.

- **Exposure to sunlight.** Speedfit products, when used indoors, are not affected by sunlight. When used out doors protect from ultra violet light by lagging or painting.

- **Pipe Inserts.** Must be used on all installations when using plastic pipe and should be fully inserted.

- **Electrical Components.** Electrical products in the Speedfit Underfloor Heating Systems are designed only to be used in U.K. Electrical Supply situations.

- **Electrical Continuity.** If Speedfit is used in an existing metal system which may have been used for earthing, electrical continuity should be reinstated.

- **Collet Clips.** White and Grey collet clips are used with standard fittings to prevent accidental pipe disconnection. Red or blue clips provide colour coding of pipe. Red and blue clips should not be used to prevent accidental release of pipe.

- **Pre-Screed System Testing.** To ensure the pipework has been installed correctly and prior to the screed being laid, it is essential that the system is checked and hydraulically wet tested.

Testing should be carried out at 2 bar for 10 minutes and 10 bar for 10 minutes.

This testing, combined with other relevant checks, should reveal installation problems and is regarded as good plumbing practice.

- **Pressurisation During Screed Laying & Curing.** In accordance with BS1264-4, the system should be left under pressure at a minimum of 6 bar for the duration of the laying and curing of the screed.

Under NO circumstances should the UFH System be used to quicken the screed drying process.

- **System Flushing.** As is usual practice for any plumbing installation, flushing of the system prior to the use of JG Speedfit is recommended to remove any contaminants/chemical residue from elsewhere in the system.

- **Vermin.** Speedfit products should not be used in vermin infested areas.

- **Frost Protection.** During the installation process it is important that pipe containing water be protected from frost.

TECHNICAL CHECKLIST - UNDERGROUND FITTINGS

- **Applications.** Speedfit Underground Fittings are designed to connect MDPE pipes (MRS-PE80) used above or below ground, to convey potable water from distribution mains to individual properties.

- **Sizes.** 20mm and 25mm with adaptors for:-
- Copper to BS2871 Part 1 / BS EN1057. Table X and Table Y.
- Screwed pipe.
- LDPE (to BS1972 Class C and Class D) in 1/2" and 3/4" inch sizes.

- **Pipes.** Speedfit Underground Fittings can be used with:-
- Blue MDPE pipe to BS6572.
- Black MDPE pipe to BS6730.
- Pipes conforming to ISO161/1, ISO3607 and DIN16893.

- **Working Temperatures and Pressures.** Maximum working pressure 12 Bar @ 20°C.

- **Standards.** Speedfit Underground Fittings are approved by the Water Regulations Advisory Scheme.

- **Performance.** The fittings are manufactured from tough plastic material well able to meet the stringent requirements of the water industry. They have been approved by the WRAS and, as such, have passed the 'pull out test' where a force shown below is applied to a connection between MDPE pipes and a fitting for 5 minutes without the connection failing.

Test Force	Size	
	20mm	25mm
Newtons	1900	2500
lbs	427	562

- **DO NOT USE FOR Gas, fuel oil or compressed air applications or hot water.**

- **Chemical Effects.** For below ground applications the fittings require no additional preparations - coating etc. When used above ground, avoid contact with aggressive chemical compounds. Protect from frost where necessary. In the United Kingdom, potable water does not contain high levels of chemicals (eg chlorine etc) that would adversely affect Speedfit Underground Fittings.

- **Exposure to sunlight.** Permanent exposure to direct sunlight will necessitate lagging the fittings.

- **Pipe Inserts.** Pipe inserts must be used and fully inserted on all connections to MDPE or LDPE pipe.

- **System Testing.** Pressure test to 1.5 times working pressure for 10 minutes before connecting to the mains supply. It is recommended that all pipe and fitting installations are pressure tested after installation before handing over to the final user

- **Maximum Torque Figures.** The maximum torque figures for BSP and BSPT threads used on Speedfit products are as follows:-

Size	Maximum Torque
1/2	3.0 Nm
3/4	4.0 Nm

It is recommended that all installations are checked prior to use to determine that a seal has been made.

The maximum torque figures quoted for use with Speedfit fittings are dependent on the mating thread conforming to the relevant British International thread standards.